

From: Conrad Schneider <cschneider@catf.us>
Sent: Sunday, November 11, 2012 10:01 PM
To: Michael Goo [Ex. 6 - Personal Privacy]
Subject: Re: Thoughts about next steps on 111(d)

O.K. Bruce and I can do Wednesday 11/14 anytime before 2 p.m. or any day the following week (week of 11/19). Let us know what works for you.

Thanks,
 CS

Conrad Schneider
 Advocacy Director
 Clean Air Task Force
 8 Museum Way
 Brunswick, Maine 04011
 (207) 721-8676
 (207) 721-8696 (facsimile)
 cschneider@catf.us

Sent from my iPad

On Nov 11, 2012, at 7:23 AM, Michael Goo [Ex. 6 - Personal Privacy] wrote:

> Thanks for reaching out. Let's set something Up
 > For
 > Next
 > Week.
 > Things
 > Are
 > Great!

>
 > Sent from my iPhone

>
 > On Nov 10, 2012, at 10:21 AM, Conrad Schneider <cschneider@catf.us> wrote:

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 >> Hi Michael-
 >> Congratulations (on still having a job)!!! Now, its post-election, and a young man's fancy turns to . . . you guessed it, sec. 111(d)! As you and your folks are thinking about whether/how to move forward on CO2 emissions from existing coal plants, I want you to be aware of some new analysis that CATF has recently completed with the NorthBridge Group that could help shape your thinking about how much upside there is here i.e., is there a "win"? We've all been looking for the "sweet spot" on this issue, i.e., where we can get more (CO2 reductions) for less (money). We think we've found such a sweet spot and want to share our analysis with you, Alex, and whoever else needs to see it as you are composing your thoughts and recommendations. What's nice about our analysis too is that we've run the policy at various levels of stringency, so you can see what you get for an incrementally more (or less) stringent version of our policy. Bruce Phillips (from NorthBridge) and I can be down at your convenience to run you through the policy, which we've designed to meet as many of your criteria regarding: CO2 emissions reductions (meaningful, not trivial), cost (a fraction of MATS), retirements (as few as possible), price impacts (very modest), regional redistribution of wealth (none), and possibly most importantly, identifying companies with coal-fired

generation that are economic winners under the policy (lots). We've heard the need for this last one from the WH several times -- they really want some companies with coal generation on-board. Pre-election, we were already beginning to reach out to those companies we've identified as winners in order to gain their support. Many of the companies we've spoken with are interested, several are very interested. Now, they are now calling us. So, in sum, we'd like to meet with you and (as appropriate) your team, confirm that these design criteria are still applicable, show you our policy and economic analysis, and get your thoughts. Please let me know how you would like to proceed.

>>

>> Hope you, Debbie, and Fiona are well!

>>

>> Cheers,

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>>

>> Conrad G. Schneider

>> Advocacy Director

>> Clean Air Task Force

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>>

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>>

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From: Conrad Schneider <cschneider@catf.us>
Sent: Wednesday, November 14, 2012 9:16 AM
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: Re: Thoughts about next steps on 111(d)

Hi Michael-

Update on scheduling: Alex asked about early next week and I replied that Bruce Phillips and I can do a meeting Monday 11/19 before 2 p.m. or Tuesday 11/20 anytime.

Thanks,
CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
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www.catf.us
8 Museum Way
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

On Nov 14, 2012, at 9:10 AM, Michael Goo wrote:

> Ok cool. We will get back to you.

>

> Sent from my iPhone

>

> On Nov 11, 2012, at 10:01 PM, Conrad Schneider <cschneider@catf.us> wrote:

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From: Conrad Schneider <cschneider@catf.us>
Sent: Saturday, November 10, 2012 10:22 AM
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Thoughts about next steps on 111(d)

Hi Michael-

Congratulations (on still having a job)!!! Now, its post-election, and a young man's fancy turns to . . . you guessed it, sec. 111(d)! As you and your folks are thinking about whether/how to move forward on CO2 emissions from existing coal plants, I want you to be aware of some new analysis that CATF has recently completed with the NorthBridge Group that could help shape your thinking about how much upside there is here i.e., is there a "win"? We've all been looking for the "sweet spot" on this issue, i.e., where we can get more (CO2 reductions) for less (money). We think we've found such a sweet spot and want to share our analysis with you, Alex, and whoever else needs to see it as you are composing your thoughts and recommendations. What's nice about our analysis too is that we've run the policy at various levels of stringency, so you can see what you get for an incrementally more (or less) stringent version of our policy. Bruce Phillips (from NorthBridge) and I can be down at your convenience to run you through the policy, which we've designed to meet as many of your criteria regarding: CO2 emissions reductions (meaningful, not trivial), cost (a fraction of MATS), retirements (as few as possible), price impacts (very modest), regional redistribution of wealth (none), and possibly most importantly, identifying companies with coal-fired generation that are economic winners under the policy (lots). We've heard the need for this last one from the WH several times -- they really want some companies with coal generation on-board. Pre-election, we were already beginning to reach out to those companies we've identified as winners in order to gain their support. Many of the companies we've spoken with are interested, several are very interested. Now, they are now calling us. So, in sum, we'd like to meet with you and (as appropriate) your team, confirm that these design criteria are still applicable, show you our policy and economic analysis, and get your thoughts. Please let me know how you would like to proceed.

Hope you, Debbie, and Fiona are well!

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From: Michael Bradley <mbradley@mjbradley.com>
Sent: Friday, September 28, 2012 8:26 AM
To: Ex. 6 - Michael Goo
Subject: FW: 361B Contingent Evaluation
Attach: One-pager.pdf

FYI

COMPARISON OF QUANTIFIED BENEFITS AND COSTS FROM §316(b) PROPOSED RULE AND EPA SURVEY

	Screens on MOST plants	Screens on ALL plants	Screens & CCC on ALL plants
<i>Conventional Cost Benefit from Proposed Rule:</i>			
Annualized Costs (2011\$ million)	\$389	\$466	\$4,934
Annualized Benefits	\$15.9	\$16.3	\$97.0
Benefits to Costs Ratio	24 to 1 <i>Negative</i>	29 to 1 <i>Negative</i>	51 to 1 <i>Negative</i>
<i>Mail Survey from NODA:</i>			
Annualized Costs (2011\$ million)	\$389	\$466	\$4,934
Implied Benefits from the Survey (2011\$ million)	\$2,228	\$2,275	\$7,449
Benefits to Costs Ratio	5.7 to 1 <i>Positive</i>	4.9 to 1 <i>Positive</i>	1.5 to 1 <i>Positive</i>
<i>Comparison of Benefits from Proposed Rule and Survey:</i>			
Factor of Increase	140 times	140 times	77 times
Percentage Increase	14,000%	14,000%	7,700%

BACKGROUND

- In April 2011, as the result of a discretionary settlement with the environmental group Riverkeepers, EPA issued a proposed rule under Section 316(b) of the Clean Water Act, which requires cooling water intake structures to reflect the best technology available (“BTA”) to minimize adverse environmental impacts. (“Proposed Rule” or “316(b) Rule”)
- In the Proposed Rule, EPA assumes that reductions in impingement (organisms impinged against screens on intake structures) and entrainment (organisms carried through the cooling water system) will “minimize adverse environmental impact.” However, the administrative record does not contain any evidence that cooling water intake structures actually impair fish populations or communities.
- EPA proposed that advanced traveling screens were BTA for impingement, and proposed that state permitting directors determine BTA for entrainment on a site-specific basis considering costs and benefits. EPA sought comment on whether all existing facilities should be forced to have cooling towers--a massive cost and reliability concern.
- EPA calculated the \$466 million annual costs of the preferred option outweigh \$16.3 million annual benefits by a ratio of 29 to 1, with a total cost of more than \$30 billion. EPA based its benefits on assumed market impacts on the commercial and recreational fishing industries.

- EPA noted that its analysis was not complete because it did not fully monetize “non-use” benefits. “Non-use” benefits are purely subjective values that individuals place on protecting the existence of a resource that they never intend to directly use or interact with in some way.
- EPA conducted a nationwide public opinion survey asking individuals how much they are hypothetically willing to pay to avoid harm to fish. At the 11th hour, EPA now proposes in a recent Notice of Data Availability (“NODA”) to entirely replace its conventional benefits analysis with the survey results.
- The annual benefits from the mail survey are now \$2.3 billion for the proposed option, or almost 140 times or 14,000% greater than EPA's conventional analysis. Further, this opens the door to CLAIMED ANNUAL BENEFITS OF \$7.5 BILLION JUSTIFYING HUNDREDS OF BILLIONS OF DOLLARS OF COSTS ON ENERGY CUSTOMERS.

IMMEDIATE REGULATORY THREAT POSED BY CONTINGENT VALUATION OF NON-USE BENEFITS

- The survey results provide benefit “overhang” to justify extremely expensive controls, e.g. cooling towers, either in the rule or based on state-by-state determinations.
- Where EPA appeared to give with the one hand by allowing site-specific entrainment decisions by the states, it is taking away with the other because states may be required to use surveys to justify their decisions. This is shaping up as NSR on steroids.
- The exaggerated benefit valuations would provide a basis for challenges by environmental groups to permits that did not require closed cycle cooling, and open the door to a whole new area of tort litigation.
- Due to the prohibitive expense to install towers (up to \$1 billion per tower in some cases) many plants will opt to close and system reliability will be put in jeopardy.
- Use of the survey violates the Information Quality Act.
- Use of the survey will also result in litigation challenging the underlying basis of the rule as a result of the lack of record support for the survey’s factual assertions regarding the environmental benefits of the rule.

BROADER REGULATORY THREATS POSED BY ALLOWING VALUATION OF NON-USE BENEFITS IN REGULATION

- Non-use valuation has never been used to justify costs of a major rulemaking. Allowing non-use benefits methodologies in this rule would set a dangerous precedent.
- There are a number of pending and prospective critical water quality issues where the application of seriously flawed non-use benefit methodologies could impose enormous unjustified costs, e.g., the steam effluent limitation guidelines, waters of the U.S. jurisdiction, and water consumption policies.
- This also could be used to justify a dramatic shift in air, natural resource, and energy regulations and policies.
- GIVEN THE WILDLY INFLATED RESULTS OF SURVEYS, ANY AGENCY COULD JUSTIFY ANY REGULATION FOR ANY REASON AT ANY COST.

From: Ken Kopocis <Kopocis.Ken@epamail.epa.gov>
Sent: Thursday, July 12, 2012 4:28 PM
To: michael Goo Ex. 6 - Personal Privacy
Subject: Will call in a minute.

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Wednesday, December 7, 2011 9:22 AM
To: **Ex. 6 - Michael Goo**
Subject: FW: CEG 316 Dec 6 2011.docx
Attach: CEG 316 Dec 6 2011.docx

Attached is the document we discussed last evening. I would like to follow up with you soon on this in an effort to head off CEO calls to Lisa. Last Friday's meeting with the Water Office was viewed as a major step backwards by the various CEG reps to the point where a few companies believe a discussion with Lisa is warranted. Thanks.

CONFIDENTIAL DRAFT - December 6, 2011

The CEG 316(b) Initiative proposed a framework by which EPA would define preapproved BTA as including technologies that substantially reduced impingement mortality. The CEG 316(b) Initiative proposed to define preapproved BTA as:

- modified traveling screens, such as Ristroph screens or equivalent modified traveling screens, with a fish return system;
- approach velocity of 0.5 feet/second (fps), measured at the first point of entry to the cooling water intake system;
- existing offshore velocity caps; or
- existing closed-cycle cooling, including cooling towers or cooling ponds that were not considered to be waters of the U.S. at the time that they were built.

The objective with this proposal was to ensure that companies that made investments in technology to address impingement would be confident that appropriately installing and operating BTA would ensure that they were in compliance with the rule. By comparison, the proposed single numeric standard cannot reflect site specific differences, and the industry was concerned that the proposed impingement mortality standard could effectively require cooling towers.

For the limited number of sites where the above preapproved BTA is infeasible, we proposed a public and documented process to allow the facility and permitting director to identify comparable BTA for the site. (The attached explains the proposed comparable process.)

We understand EPA is concerned that there are examples where the above preapproved BTA may not be operating effectively and appropriately addressing impingement mortality. The concerns EPA has raised with respect to velocity caps and closed-cycle cooling, however, appear to be the exception in that EPA staff generally agrees that both technologies, when properly installed and operated, can significantly reduce impingement mortality. To that end, it will be important for EPA to define the criteria for each preapproved BTA to ensure the technologies are operated consistent with best management practices. Each permit review should also require the permitting director to confirm the technology installed is BTA and operated appropriately to ensure maximum benefit.

The alternative approach EPA staff appear to be considering is defining BTA as only modified traveling screens, such as Ristroph screens or equivalent modified traveling screens, with a fish return system. Units with any alternative to such screens, including offshore velocity caps and closed cycle cooling, would be required to demonstrate that such technologies achieve a comparable reduction in impingement mortality. If this approach is finalized, it would create significant business uncertainty for the industry, including for those units that have made substantial investments in advanced technology and successfully minimized impingement mortality. Requiring a facility that has already invested in effective cooling towers or offshore velocity caps to undergo additional studies and public review of the technology is an inefficient use of resources for the company, state, and EPA. In fact, one of the concerns we have heard from EPA regarding the CEG proposal is that it is important that only a limited number of units elect to undergo a comparable process with their permitting director. Establishing BTA as only modified traveling screens with a fish return system appears to conflict with that goal as it would exclude, for example, closed cycle cooling as BTA and require more units to undergo a comparable process.

The CEG 316(b) Initiative companies have significant concerns that requiring a lengthy and uncertain administrative process for units that have already demonstrated effective approaches to minimize any adverse environmental impact could create significant regulatory uncertainty and expense without any

CONFIDENTIAL DRAFT - December 6, 2011

environmental benefit. As we saw with the recently released NERC report, it is important that the NODA clarify EPA's intent to develop a flexible approach that requires advanced controls to be installed but recognizes the site specific differences. Without such clarity in January, continued reliability concerns are likely to be raised by some stakeholders, which could potentially undermine this rule as well as EPA's air agenda.

We would recommend that EPA use the NODA to propose definitions for each potential preapproved BTA and accept comment on those definitions to ensure the final rule includes technologies that effectively reduce impingement mortality. (Attached is a proposed definition and discussion regarding offshore velocity caps.) By defining the preapproved BTA technologies appropriately, EPA can establish a rule that ensures facilities operate technologies to achieve substantial environmental benefit.

In addition to the definition of preapproved BTA, the following outline the additional issues for the upcoming NODA:

- 1) *De minimis*—We understand EPA's goal of ensuring that the *de minimis* exception be appropriately structured to allow state permitting directors the discretion to protect threatened or endangered species and not effectively allow the majority of the industry not to install technologies. At our recent meeting with EPA, we outlined the attached discussion regarding *de minimis* and suggested that a *de minimis* exception be based on site-specific factors and criteria that are consistent and verifiable. The different water bodies, species of concern, and seasonal dynamics affect impingement such that an appropriate *de minimis* exemption for one facility may be too restrictive at another and too large at another facility. The attached also provides the example of PG&E's Diablo Canyon Power Plant as it can be instructive to the design of a metric to apply on a site-specific basis. Alternatively, if EPA determines it appropriate, we also discussed establishing a national metric that is based on biomass per volume of water circulated combined with a general benchmark for annual total impingement losses.
- 2) Cooling Ponds/Cooling Towers – Although not expected to be part of the NODA, clarifying the definition of closed cycle cooling will be a critical piece of the final rule. EPA's proposed definition of a "closed-cycle recirculating system" at 40 CFR 125.92 is unnecessarily restrictive. The proposed definition indicates that closed-cycle cooling should not "rely upon continuous intake flows of water". While the basis for this provision is not clear from the proposal, we recommended in the CEG 316(b) Initiative comments that EPA revise the definition to preclude one-time passage of water, but recognize that it is common practice for cooling towers and cooling ponds to receive makeup water on a continuous or semi-continuous basis to offset evaporation, drift, and blowdown. The makeup rate for these systems is greatly reduced relative to once-through cooling systems (generally a 93 percent or better reduction depending on the salinity of the intake water).
- 3) Intake Velocity – We have had continued discussions with EPA as to the appropriate point of measurement (approach versus through screen velocity) as well as the basis for the proposed 0.5 fps. We agreed to have a follow up technical meeting with UWAG, EEI, and EPRI once the NODA is released.

From: Michael Bradley <mbradley@mjbradley.com>
Sent: Friday, March 2, 2012 1:14 PM
To: **Ex. 6 - Michael Goo**
Subject: FW: GHG NSPS

Michael,

Below is the statement which the majority of CEG CEOs have signed off on regarding the GHG NSPS for new fossil fueled electric generating sources. The intent is to send a constructive message and not a negative message. I anticipate that there will be a very strong negative reaction from the coal industry as well as from the electric companies which have historically relied on substantial coal generation. We are still waiting for a couple of additional companies to weigh in on the statement.

We continue to believe federal legislation is the most effective tool to create a long-term price signal to reduce greenhouse gas (GHG) emissions. However, we are committed to working constructively with EPA and other stakeholders on policies that encourage the reduction of GHG emissions from the electric generating sector. We do not anticipate that the proposed GHG performance standards for new sources will directly affect our members' investment plans. Further, based on our review of recent projections by the U.S. Energy Information Administration and current market dynamics, it does not appear that the proposed GHG performance standards for new sources will significantly impact planned new construction.

I'm available on my cell this afternoon as well as this evening.

Michael

From: Michael Bradley <mbradley@mjbradley.com>
Sent: Monday, March 26, 2012 5:57 PM
To: Ex. 6 - Michael Goo
Subject: FW: GHG NSPS

Michael,

See below the revised statement we are attempting to reach agreement on with all of the CEG companies. We currently have six member companies on board with two major companies still in the review/consideration stage.

I can be reached on my cell this evening.

Michael

The members of the Clean Energy Group's Clean Air Policy Initiative continue to believe that federal legislation is the most effective tool to create a long-term price signal to reduce greenhouse gas (GHG) emissions. We supported EPA's endangerment finding that GHGs represent an environmental harm, and we have supported EPA's regulation of GHGs under the federal Clean Air Act.

EPA's action today represents to us a logical, modest step in establishing a standard for new fossil electric generating units to meet. The proposal provides the industry with business and regulatory certainty, and based on our review of recent projections by the U.S. Energy Information Administration and current market dynamics, it does not appear that the proposed GHG performance standards for new sources will significantly impact the reliability of the electric system.

We applaud EPA's decision to make the standard prospective in nature so that it only applies to brand new units and does not apply to units under development, modifications, or to existing units. We understand EPA continues to evaluate the regulatory options affecting these units under section 111(d) of the Clean Air Act, and we look forward to working constructively with the Agency and stakeholders to evaluate the best regulatory approaches to achieve meaningful standard(s) and to do so in as flexible and economic a manner as possible.

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Tuesday, December 13, 2011 4:49 PM
To: **Ex. 6 - Michael Goo**
Subject: FW: Highly Confidential

Below is the central message of the EEI letter calling for the Section 112 President to issue an Executive Order for additional time. Please do not circulate or indicate where this info came from.

“As members of EEI, we support the consensus view of our membership that the President should issue an Executive Order under section 112 of the Clean Air Act to provide additional time, as necessary, for power plants to achieve compliance with the utility MACT rule. This Executive Order should be issued at the time the MACT is finalized so that planning, evaluation and implementation for plants likely to need additional time can be undertaken expeditiously on a forward-looking basis.

“Congress recognized that the availability of technology and national security interests are legitimate and justifiable reasons to extend a MACT deadline. Clean Air Act section 112(i)(4) allows the President to grant an “exemption” (i.e., an extension of time) to the utility MACT deadlines for up to two years based on a finding that ‘(1) the technology to implement such standard is not available, and (2) it is in the national security interest of the United States to do so.’

“We represent the seven companies that were charged by EEI’s Executive Committee with leading industry MACT discussions with both the Administration and the Environmental Protection Agency.”

From: Michael Bradley <mbradley@mjbradley.com>
Sent: Thursday, December 1, 2011 2:09 PM
To: **Ex. 6 - Michael Goo**
Subject: FW: Suggested pints for LJ to convey to CEOs

Michael,

Below are some suggested talking points for Liza to convey to CEOs. She needs to remind them that she's depending on their support for an effective toxics rule, one that is legally sound and looks forward to continued collaboration on 316B.

- We are in the end game on deciding the final features for the Utility Toxics Rule, and I am very appreciative of your support all the way through this process.
- I want to assure you that we are trying to be as flexible as possible for the final rule, but I am leery of some of the industry pressures for certain features that present undue legal risk for the rule.
- EPA is committed to ensure units that need more time to install controls and that are needed for reliability purposes receive the necessary extensions consistent with the Act, but there are certain aspects that some in the industry are calling for including adjustments to the mercury standard and the process for extensions that create significant litigation risks for the rule. We have to stay within the four corners of the Clean Air Act.
- We are on a successful path to finalize an effective rule, and I am also optimistic that we can achieve similar success on the 316(b) rule.
- It has, and will continue to be, very important to have companies with your vision and leadership constructively engaged with the Agency and with the industry to ensure the final Utility Toxics Rule is a legally sound rule.

You can reach me on my cell this afternoon

Thanks

Michael

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Thursday, December 1, 2011 2:01 PM
To: Ex. 6 - Michael Goo
Subject: Follow up

Michael,

Below are some suggested talking points as we discussed:

- We are in the end game on deciding the final features for the Utility Toxics Rule, and I am very appreciative of your support all the way through this process.
- I want to assure you that we are trying to be as flexible as possible for the final rule, but I am leery of some of the industry pressures for certain features that present undue legal risk for the rule.
- EPA is committed to ensure units that need more time to install controls and that are needed for reliability purposes receive the necessary extensions consistent with the Act, but there are certain aspects that some in the industry are calling for including adjustments to the mercury standard and the process for extensions that create significant litigation risks for the rule. We have to stay within the four corners of the Clean Air Act.
- We are on a successful path to finalize an effective rule, and I am also optimistic that we can achieve similar success on the 316(b) rule.
- It has, and will continue to be, very important to have companies with your vision and leadership constructively engaged with the Agency and with the industry to ensure the final Utility Toxics Rule is a legally sound rule.

You can reach me on my cell this afternoon Ex. 6 - Personal Privacy

Thanks

Michael

From: Michael Bradley <mbradley@mjbradley.com>
Sent: Tuesday, November 22, 2011 5:34 PM
To: **Ex. 6 - Michael Goo**
Subject: NERC Report and EEI tactics

Michael,

The NERC Board approved the NERC Reliability Report today with revisions that show 316B causing the vast majority of the retirements and that the air regulations have a minor impact. It is scheduled to be released next Tuesday in advance of the FERC workshop. If you would like a copy of the report let me know. CEG will be issuing a press statement to point out that the weaknesses in the analysis as well as to spin the results as somewhat favorable. I will send you the press statement tomorrow.

As you are aware EEI is pushing very hard for the categorical 1 year extension as well as for the 2 year Presidential extension. EEI will be convening a CEO call early next week to agree on a strategy to convince the Administration to accept their proposed revisions which will entail making calls to Lisa and possibly a request for another EEI CEO meeting with Lisa. It would be useful if we could touch base tomorrow to discuss how best to manage these dynamics. We have a number of efforts planned for next week and it would be good to get your input.

I plan to be in the office until noon tomorrow and then can be reached on my cell.

Michael

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Tuesday, January 10, 2012 12:34 PM
To: **Ex. 6 - Michael Goo**
Subject: Personal

Michael

As follow up to our discussion, below are the key concerns that we have with the NODA based on our current understanding of the NODA.

In general, I see two key objectives with the NODA:

- 1) Make clear to the industry and stakeholders that EPA is changing course for the IM standard and will require units to comply with a technology-based standard rather than a numeric standard.
- 2) Provide enough certainty so that stakeholders can clearly agree that the rule will not drive a significant number of retirements causing reliability concerns predicted by NERC, for example.

Based on our conversations, we understand that the NODA will indicate that BTA is defined as:

- modified traveling screens, such as Ristroph screens or equivalent modified traveling screens, with a fish return system;
- approach velocity of 0.5 feet/second (fps) (the point of measurement is an issue we can continue to discuss with the Water Office once the NODA is released); or
- closed-cycle cooling. (For closed-cycle cooling, the definition and inclusion of cooling ponds is an outstanding issue that we understand will not be addressed in the NODA as any changes in the final rule will be a logical outgrowth of the proposal. As we have discussed, it will be important to continue to discuss the appropriate definition once the NODA is released.)

We would recommend that the NODA indicate that facilities relying on one of the three options above are required to operate that technology consistent with best management practices and manufacturers specifications. CEG would oppose a requirement to perform annual or monthly tests to demonstrate optimization of that technology. Rather, the five year permit review process should serve as a process to ensure that the technology is operated appropriately and continues to be BTA.

For units that do not meet one of the three BTA options listed above, we understand EPA would require companies to demonstrate that the alternative technology achieves the numeric IM reduction. We have two concerns with this approach. First, to the extent the NODA contains the same numeric standards, I expect you will see significant concern from the industry. While we understand the NODA will suggest EPA is reviewing the comments and recognize stakeholders* concerns, given that the 12% and 31% numbers were based on a such a limited data set, I am concerned that industry will simply focus on the fact that they will need to compare any alternative technology to those numbers regardless of whether EPA revises them in the end. Thus, the tone surrounding the 12% and 31% numbers will be important to counter retirement predictions and the inevitable Congressional pushback.

Second, a straight application of any national numeric standard without consideration of cost will raise significant concerns. For example, the other pre approved BTA technology CEG had proposed was an offshore velocity cap. We understand the NODA currently would allow a company with an offshore velocity cap to compare the IM level to the numeric limit in the final rule. The concern with identifying a single number that is appropriate for every site is that the final standard may be too high for one and too low for another based on site specific factors. For the offshore velocity cap example, I could imagine a case where a company has existing data that shows an impingement level just above the numeric standard finalized by EPA. If it is a straight numeric application to determine BTA, it is unclear what else a company can do. For an offshore velocity cap located 7,000 feet offshore in 60 feet of water, there is not a lot of additional technology that can be added without significant cost. Thus, cost has to be a factor that the permitting director can consider and weigh against the benefits of any additional technologies. We hope the NODA will avoid suggesting that a facility with an existing offshore velocity cap, achieving an 80% reduction in mortality, would be forced to install a cooling tower because it exceeds the numeric standard by a small margin. In such a case, stakeholders will assume those units will elect to retire instead.

The other key issue for CEG is the de minimis exception. CEG has discussed with EPA PG&E's Diablo Canyon example, and I believe Tony Earley discussed the plant in his meeting with Lisa Jackson. The intake at Diablo Canyon was designed to minimize impingement and the impingement numbers demonstrate its success * the plant's annual impingement losses are under 800 pounds per year (approximately 2 pounds or 12 fish per day), while circulating

approximately 2.5 billion gallons of water per day. The open ocean environment means that most species are adapted to large changes in tides, as well as significant swells. During the 2003 NPDES renewal process, the Central Coast Regional Water Quality Control Board testified that *Regarding impingement of adult fish in the intake structure, the number of fish lost per year is so minor (a few hundred fish per year) that intake structure modifications or operational changes are not necessary.* If EPA included a number in the NODA for the de minimis exemption that is more stringent than one approved by California, I am concerned about the political pushback on the rule.

To summarize, the following are the key issues that we hope to resolve in the NODA as well as suggested improvements, but it would probably be helpful to discuss further:

- 1) De minimis exemption * ensure the de minimis cut off in the NODA is consistent with examples in states, such as California, where the state has concluded no additional technology is needed because of the low impingement levels.
- 2) Treatment of offshore velocity caps * consider suggesting in the NODA that offshore velocity caps operating consistent with best management practices are BTA and take comment on what existing data can be submitted to demonstrate effectiveness. Clearly, a 60% reduction may not be BTA but permitting authorities should have the ability to determine that a reduction above 80%, for example, is BTA.
- 3) The comparison of alternative technologies to one single numeric standard without consideration of cost - I would recommend that EPA at least take comment on how best to consider cost for alternative BTA for the limited number of sites where the pre approved BTA is technically infeasible.

Carrie and I will be in DC on January 17th and if it makes sense to meet that morning, we would be happy to do so. In the meantime, please do not hesitate to call with any questions.

Thanks

Michael

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Thursday, January 12, 2012 4:34 PM
To: michael Goo Ex. 6 - Personal Privacy
Subject: Personal
Attach: NERC re 316b.docx

Michael

As follow up to our conversations, the attached outlines additional information regarding the reliability concerns we have discussed. Please let me know if you have any questions.

Thanks

Michael

There are two key objectives for the upcoming NODA under 316(b) of the Clean Water Act:

- 1) Make clear to the industry and stakeholders that EPA is changing course for the impingement mortality standard and will require units to comply with a technology-based standard rather than a numeric standard.
- 2) Provide enough certainty so that stakeholders can clearly agree that the rule will not drive a significant number of retirements causing the reliability concerns predicted by NERC, for example.

Both objectives are critical considering the inevitable Congressional objection that EPA is forcing the retirement of plants whose absence will jeopardize the reliability of the electric system. The NERC report released in November 2011 provides a good example of how stakeholders will interpret the NODA if EPA is not clear that it is making significant changes from the proposed rule.

In the November NERC report, the 316(b) rule was the dominant source of retirements in 2018 based on the text of the proposed rule. In the Moderate Case, the 316(b) rule resulted in 26.5 GW of coal and oil/gas steam unit retirements (and derates) through 2018. In the Strict Case, the 316(b) rule results in 42.5 GW of coal and oil/gas steam unit retirements (and derates) through 2018. NERC assumed for the Moderate Case that by 2018, 75% of the affected capacity would be required to install closed cycle cooling and 25% of the affected capacity would be required to install screens, barriers, and meet seasonal flow limits. In the Strict case, NERC assumed that 100% of the affected capacity would be required to install closed cycle cooling by 2018.

While the NERC assumptions were based on both impingement and entrainment requirements, NERC noted that if EPA does not include an alternate technology standard in the final rule, "IM compliance options would be severely limited at some plants and may require significant intake structure retrofits to meet the intake velocity of no greater than 0.5 feet per second. Should this not be available to a plant, the EPA-proposed strict fish IM standard may effectively force recirculating cooling water systems options independent of the site specific BTA entrainment standard." Thus, if there are units that cannot install the advanced screens given site specific constraints, do not have closed cycle cooling, and do not meet the minimum intake velocity, stakeholders will assume that closed cycle cooling is the only compliance option.

To counter the reliability concerns and objections, it will be important that the NODA includes in the definition of BTA advanced technologies that are effective in minimizing impingement mortality. For the small percentage of units that cannot install such BTA, it is also critical that the NODA signal a clear process to include an appropriate de minimis exemption and allow the permitting authority the ability to identify other appropriate technology requirements considering the economic, operational, and site specific constraints for why a facility would not be able to install closed cycle cooling.

From: Michael Bradley <mbradley@mjbradley.com>
Sent: Monday, October 3, 2011 11:01 AM
To: **Ex. 6 - Michael Goo**
Subject: FW: EPA Clean Air Rules-Energy Companies Print Ad
Attach: EPA CEO Print Ad 9-29-11 v2.pdf

Confidential ad to run early next week.

9/29/11 ASGK

AN OPEN LETTER TO CONGRESS AND PRESIDENT OBAMA
RE: U.S. Environmental Protection Agency's (EPA) clean air rules

A robust debate is taking place in our country about clean energy, public health and the U.S. Environmental Protection Agency's (EPA) proposed new clean air rules aimed at reducing harmful air pollution from older power plants, which still operate without modern air pollution controls.

As some of the nation's leading energy companies and manufacturers of pollution control technologies, we must lend our perspective to this debate. Our companies operate in _____ states in the U.S., and we employ more than _____ American workers. .

We support the EPA's proposed new clean air rules.

The facts are:

The electric industry can comply with EPA's new clean air rules without disrupting electric system reliability in ways that drive new investment and create jobs.

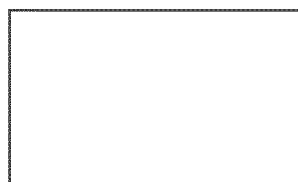
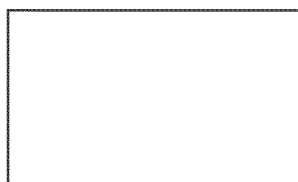
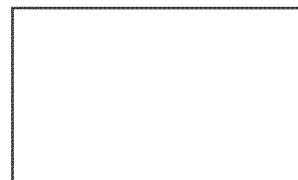
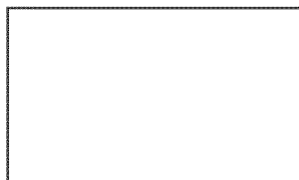
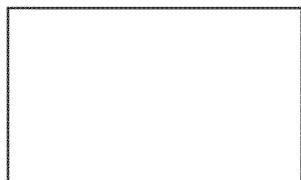
Energy companies have known these rules were coming for over 20 years, and many companies have already in modern, cost effective pollution control technologies

Contrary to claims that the EPA's rules will have negative economic consequences, our experience complying with and implementing air quality regulations _____, b _____, b _____, b _____, including job creation.

The pollution control technology to comply with these already rules exists and can be installed by the current deadliness.

America has the ability to generate clean, reliable and affordable electric power. Our companies are committed to complying with and implementing EPA's proposed new clean air rules – there is no reason for delay.

LOGOS WILL APPEAR HERE



From: Michael Bradley <mbradley@mjbradley.net>
Sent: Thursday, September 15, 2011 4:56 PM
To: michael Goo Ex. 6 - Michael Goo
Subject: Re: Getting in touch email

Michael

As follow up to our conversations, below is additional detail on the CSAPR and GHG NSPS

CSAPR

As discussed, we have been having a series of conversations with EPA about many of the CEG companies* concerns on the final state budgets under the Cross-State Air Pollution Rule (CSAPR). While the companies want to remain supportive of the final CSAPR, the state budgets for NY, NJ, and FL were significantly reduced in the final rule. These changes are making supporting the implementation of the rule as currently written very difficult. While we understand EPA is willing to make technical adjustments to state budgets based on new technical information, we are concerned that despite efforts to provide EPA with additional information, EPA is not inclined to adjust those state budgets until after October 7th * the deadline for when petitions for reconsideration and petitions to the DC Circuit are due.

Since the rule*s release about 10 weeks ago, we have been working to explain the concerns we have with certain state budgets and highlight the technical errors that result from using the IPM model and not taking into account the transmission system constraints that are unique to certain areas in the U.S. Following Eric Svenson*s outreach to Gina McCarthy regarding PSEG*s concerns, we have had several discussions with Joe Goffman and Sam Napolitano on the NJ state budget. Compared to the proposed budget, New Jersey*s final annual NOx budget was reduced by 39 percent, the ozone season NOx budget was reduced by 36 percent, and New Jersey*s SO2 budget was reduced by 51 percent. With fewer allowances available to the state, several of PSEG*s generating units are projected to be short allowances beginning in 2012, despite having advanced pollution control equipment installed and operating. Additionally, since PSEG*s generating fleet is generally well controlled, there are limited opportunities for further emissions reductions between now and 2012.

A similar situation exists for NY. Compared to 2010 emissions, NY state looks to be significantly

short of the 2012 state budgets even with the assurance provisions. We understand the NYDEC has been engaged with EPA to provide information to highlight the fact that there are many units in NY that must operate due to transmission constraints but for which the model predicted the units assumes a zero heat input. Both National Grid and Consolidated Edison of NY have also had calls with Sam and Joe to express similar concerns with the model and state budget, and had provided similar information about these must run units during the comment period. Without adjustments to the state budget, there are concerns that units needed for reliability purposes would not be able to operate.

NextEra has also met with Joe and Sam several times regarding the Florida state budget, and there we are also seeing that the IPM model fails to recognize that some units will need to run for reliability purposes due to natural gas constraints. The inability of the model to make these adjustments significantly impacts the state allowance budget.

These concerns described above are creating a very difficult dynamic within the Clean Energy Group and for these individual companies to remain supportive of EPA's regulations. There is a concern that these issues are not getting the attention needed to ensure the appropriate technical fixes are made prior to the Oct 7th deadline. Additionally, the approaches in the final rule appear to penalize the early investments many of the CEG companies made in anticipation of regulations, which creates additional difficulties for these early actors.

I expect Ralph Izzo will likely reach out to Lisa Jackson on these concerns, and it would be helpful to explore whether EPA can make the appropriate technical adjustments related to transmission constraints for certain state budgets prior to the Oct 7th deadline.

GHG NSPS

With respect to GHG NSPS, we understand that Lisa Jackson has already signaled a delay for the release of the GHG NSPS proposal for the electric sector. It would be helpful to discuss what timing is being considered. To the extent possible, it may make sense to release the proposal after mid-November in order to try to mitigate the backlash on the other EPA air regulations. It would also be good to find some time in the next few weeks to discuss with you the issues CEG has been evaluating for existing units under 111(d).

Please do not hesitate to call with any questions.

Michael

From: Michael Bradley <mbradley@mjbradley.net>
Sent: Thursday, September 15, 2011 2:41 PM
To: michael Goo [Ex. 6 - Personal Privacy]
Subject: Re: Getting in touch email
Attach: 316_b.docx

Michael

As discussed last night, attached are some points we would suggest a response to Representative Andrews could include on the impingement mortality standard. I will follow up on the other items we discussed as well shortly. Please let me know if you have any questions.

Thanks

Michael

Many of the comments you raise are similar to the ones that EPA received during the recent public comment period. Many commenters raised concerns about EPA establishing one numeric impingement mortality standard that could be appropriately applied nationwide. As EPA staff work to respond to those comments and finalize the regulations, I wanted to share information with you in order to respond to your concerns. The decision-making process has moved far enough along that I can make several points based on modifications I expect to make in the final regulations under 316(b) related to the impingement mortality requirements.

- EPA agrees that the final regulations should reflect compliance flexibility to ensure environmental benefits are achieved in a cost-effective manner. Further, as you indicate, there are numerous factors that affect impingement and the performance of technologies including different water bodies, fragile species, facility sizes, and seasonal dynamics.
- Given the wide array of circumstances and site specific factors that affect impingement mortality, EPA has concluded that a more effective regulatory approach will be to establish a technology standard. The standard will require facilities to install and operate a preferred best technology available (BTA). However, for the small percentage of facilities where the preferred BTA technology is infeasible given site specific factors, EPA will establish a rigorous process for state environmental regulators and facilities to identify appropriate alternative technologies considering the expected impingement mortality reduction, including avoidance of impingement, and cost-benefit analyses. We believe this approach will result in tremendous improvements at the vast majority of facilities.
- EPA will require that facilities operate the technologies installed for impingement mortality consistent with best management practices.
- In response to your concern regarding closed cycle cooling, EPA expects that facilities with closed-cycle cooling, including cooling towers or cooling ponds, or pre-existing offshore velocity caps would not need to install additional technologies.
- EPA is also working to include a *de minimis* exemption for plants with extremely low impingement levels and/or mortality rates based on site specific factors and cost-benefit analyses.

From: Jonathan Banks <jbanks@catf.us>
Sent: Tuesday, February 1, 2011 3:35 PM
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: jobs

Hey you are set to brief the senate staff on the CAA and jobs soon. Supposedly you have a whitepaper you are working from. Conrad has to brief a number of advocates at a meeting next week in Denver on jobs and the clean air act and would love to work off your topline messages if possible, or to work from your whitepaper if possible. Let me know.

Jonathan Banks
Clean Air Task Force
169 Park Row
Brunswick, ME 04011

207-721-8677 (p)
207-607-0606 (c)

CATF is a nonprofit organization
dedicated to reducing atmospheric
pollution through research, advocacy,
and private sector collaboration.

See our new website:
www.catf.us



From: Conrad Schneider <cschneider@catf.us>
Sent: Thursday, May 5, 2011 2:24 PM
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: Fwd: 10,000 heat rate policy

I'm resending Joe's original email. See below. Be careful to keep the units straight. There are:
 1. units; 2. capacity (MW or GW) ; and 3. generation (KWh or MWh or GWh).

Thanks,
 CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
cschneider@catf.us
www.catf.us
169 Park Row
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

Begin forwarded message:

From: Joseph Chaisson <joe100@gwi.net>
Date: May 3, 2011 5:11:01 PM EDT
To: goo.michael@epamail.epa.gov
Cc: Conrad Schneider <cschneider@catf.us>, Jonathan Banks <jbanks@catf.us>
Subject: 10,000 heat rate policy

Michael -

1. A 10,000 heat rate policy would be expressed as about a 2100 lbs. CO2/MWH emissions rate (depending on the coal type used, the range would be about 2050 - 2120 lbs/MWH).

2. Using the most recent five year running average and assuming no CCS investment (see below for CCS discussion):

A. 38% of existing capacity and 37% of average energy production is from units that would already meet the "10,000 heat rate" standard. These units (~257) could continue to operate as is indefinitely under this standard.

B. Our best GUESS is that units with heat rates above 10,000 up to about 10,500 are probably the outer boundary of units that might invest in improved unit efficiency to meet the "10,000 heat rate standard". These units (~297) are about 28.5% of existing capacity and 28% of recent coal energy generation.

C. Combining A. & B., units producing about 65% of recent coal generation which are (the most economic existing units) could run indefinitely into the future under this policy

D. About 528 (49%) existing coal units having about 34% of existing capacity and 32% of recent coal energy generation would not be able to meet this standard.

E. If all units above 10,500 heat rate eventually retire in a "10,000 heat rate" standard policy and all the energy produce by these units is replaced with new natural gas units, projected BAU power system CO2 emissions might drop by about 16%

3. While adding a limited amount of CCS could meet this standard, the most economic units producing most of today's energy - as noted above - would not need to add CCS under this policy and we suspect that most units that can't practically meet the "10,000 heat rate" standard, would not be economic to retrofit with the partial CCS they would need to meet this standard.

4. There is some risk under this policy that if gas prices trended high (into the \$7-8 range or higher) that there might be some "total rebuilds" (new boiler, steam turbine, etc. of >10,500 heat rate units to lock-in an uncontrolled for GHG coal emissions rate - if this could be done at a lower cost than a new supercritical coal plant (possible in some cases) or if the new source NSPS precludes new uncontrolled coal unit development.

let me know if you have any questions on this.

Joe

From: Conrad Schneider <cschneider@catf.us>
Sent: Thursday, June 9, 2011 2:22 PM
To: Michael Goo; **Ex. 6 - Personal Privacy**
Subject: I think you are going to like this!

Call me to discuss.

CS

From: Conrad Schneider <cschneider@catf.us>
Sent: Saturday, May 21, 2011 10:57 AM
To: Michael Goo [Ex. 6 - Personal Privacy]
Subject: Initial reaction to NSPS concepts

Hi Michael-

Im out the door for a week in sunny California with my wife. But, I wanted to give you some brief reactions from CATF staff to your read out from the meeting with the Administrator. By separate message, I sent you our latest thinking on the "algorithm". Contact Joe or Jonathan if you have questions in my absence. Joe says that we should have some diagnostics for you next week. The algorithm should be able to work with any target rate (including your 2100). Hopefully, we'll have some more information on gas co-firing next week as well. Joe is working with Alex Barron on that. With respect OAR's idea for new source NSPS -- 1850 now and 350 in 2025, my folks LOVED it (assuming it also applies to gas plants). We believe that we can help EPA build a strong record in support of setting the 350 standard in 2025. We are looking at some issues e.g., what about New England where there may be little CO2 pipeline or sequestration potential. But, in general, this is just the kind of standard we need to drive deployment of cleaner coal and gas technology and level the playing field with other zero- or near zero-power options. Let's discuss how we can support. People also really liked your demonstration provision concept. We are doing some economic analysis on it to see whether we think that will be enough to drive CCS deployment, but in some places the answer likely is yes. We don't like Sussman's idea of intra-company trading to meet the 111(b) standard (unless it is limited to your demonstration concept). We can discuss. Ann is looking into some of the legal issues implicated by all of this and we'll be back to you about that. Talk to you end of next week when I'm back in the office.

Cheers,
CS

Conrad G. Schneider
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207/721-8676
207/721-8696 (facsimile)

From: Conrad Schneider <cschneider@catf.us>
Sent: Friday, May 20, 2011 3:48 PM
To: Michael Goo **Ex. 6 - Personal Privacy**
Cc: Joe Chaisson <joe100@gwi.net>; Jonathan Banks <jbanks@catf.us>
Subject: NSPS algorithm from NorthBridge
Attach: Draft Formula Approach 5-20-2011.pdf

Hi Michael-

Attached please find the latest from NorthBridge on the NSPS "function" approach. It has been further refined (and simplified) since my last message. Joe thinks NorthBridge will have some diagnostic analysis by the last part of next week. Note: I'll be out of the office next week (M-Th), so if you have any questions about this, please call Joe. His cell number is **Ex. 6 - Personal Privacy** His office number is 207/833-6786.

Thanks,
CS

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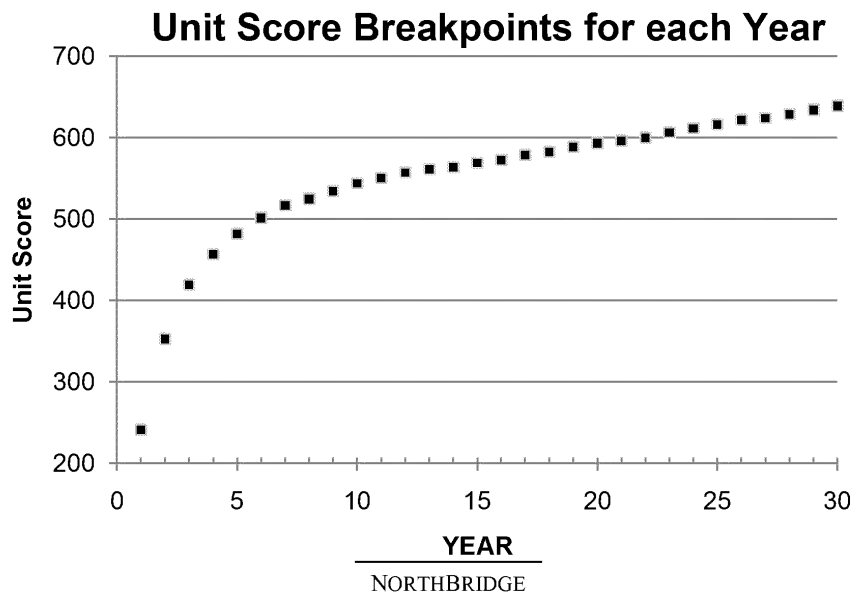
FORMULA APPROACH

The “formula” approach involves a two step process:

1. A score is calculated for each generating unit based on its size (measured in MWs) and its heat rate, as follows.

$$\text{Unit Score} = 210.4177 + 0.6384 * \text{Unit Capacity} - 23.7297 * \text{Unit Heat rate}$$

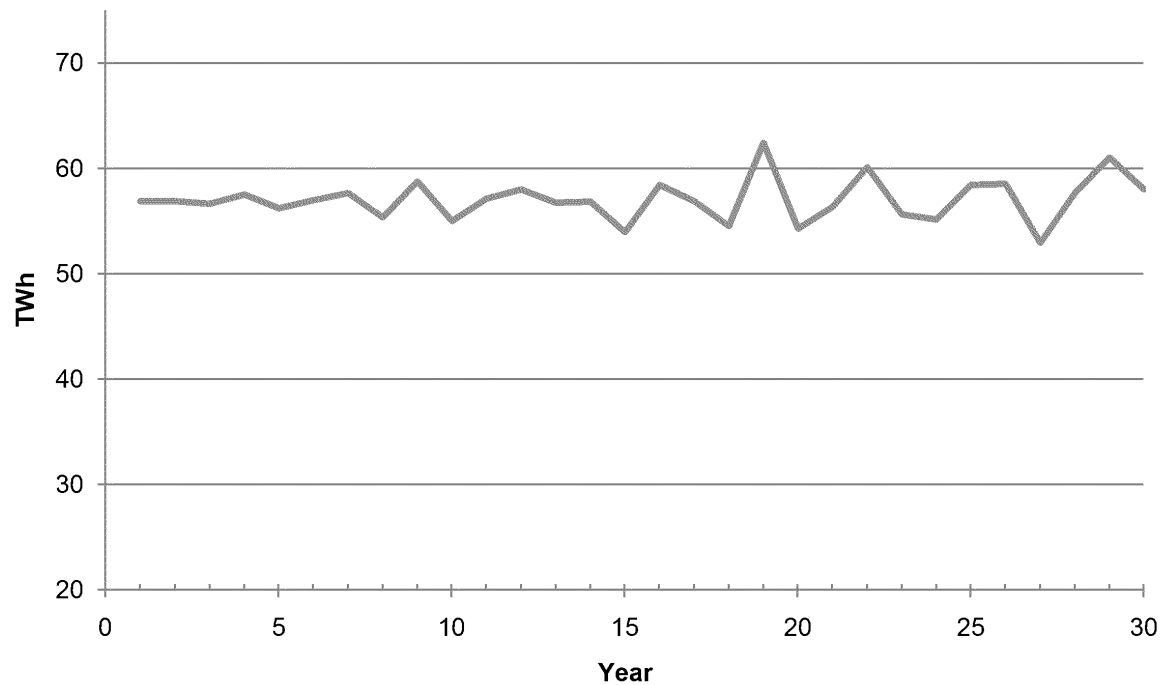
2. The resulting unit scores are used to determine the year in which each unit is first required to be in compliance.



5/10/2011

FORMULA APPROACH

Resulting TWhs by Year

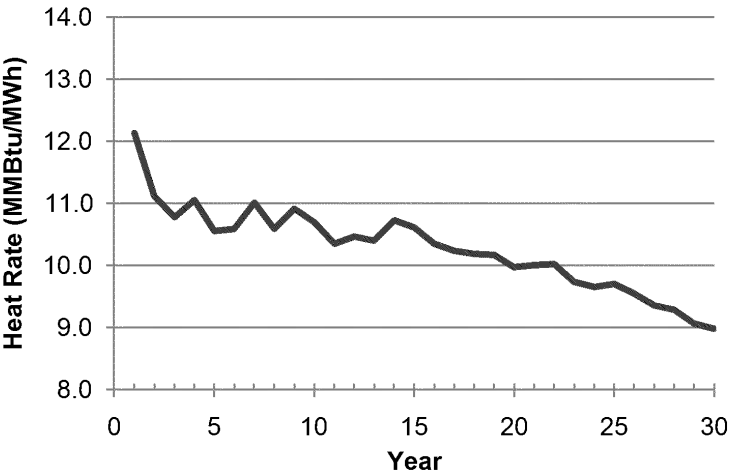


NORTHBRIDGE

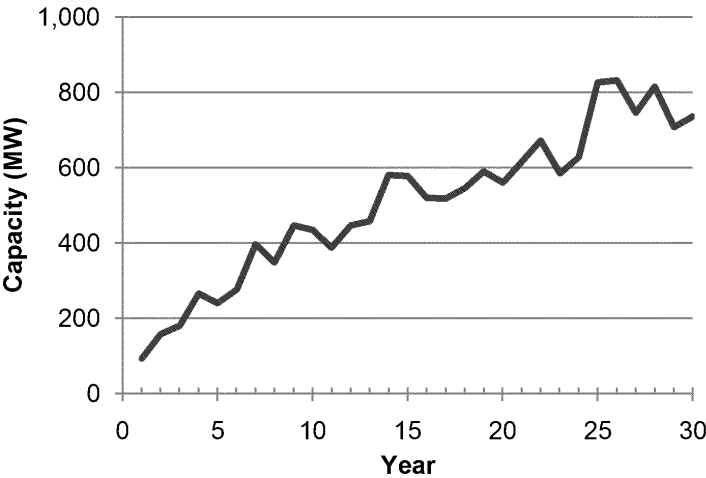
5/10/2011

FORMULA APPROACH

Average Heat Rate by Year



Average Unit Size by Year



From: Conrad Schneider <cschneider@catf.us>
Sent: Monday, June 13, 2011 11:14 AM
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Percentage decline in emission rate by 2020 in your "formula" policy

Michael-

The environmental community has decided that the best way to "message" around NSPS policies is "percentage decline in emission rate by 2020". [I think this is primarily in contrast to "numbers of retirements", which they think is a poor public frame.] The consensus message that the enviros have agreed to deliver to the Administration is that an EGU GHG NSPS should result in a 10-15% reduction in fossil emission rate. The table below prepared by NorthBridge shows the performance of your 2100 lb. (and our 1350 lb.) "formula" policies expressed as a percentage decline in emission rate. You can see from this that your policy entails a 13% reduction in the rate by 2020 -- bang on with the enviro community "ask".

		2020		2025	
	2012	2100	1350	2100	1350
Power Sector CO2 MM Tonnes	2.263	2.173	2.163	2.141	2.046
Decline in Emissions %		4%	4%	5%	10%
Fossil Generation TWh	2746	3022	3022	3242	3242
Fossil Emission Rate (T/MWh)	0.82	0.72	0.72	0.66	0.63
Decline in Emission Rate %		13%	13%	20%	23%

Thanks,
CS

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From: Conrad Schneider <cschneider@catf.us>
Sent: Thursday, May 5, 2011 2:21 PM
To: michael Goo [Ex. 6 - Personal Privacy]
Subject: Re: test

Michael-

One thing right off to bat. Red flag: you need to keep your units straight. There are units, capacity, and generation and they are all different. On page one of Option X, you say "The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet. That is not correct. They constitute 65% of the generation. They constitute a much smaller percentage of units. Paul is counting the number and percentage of units right now. Remember: you could shut down the smallest, least efficient half of the coal units in the U.S. but lose only 10-15% of the generation. Which is to say that a relatively small percentage of larger, more efficient units generate most of the power (and emit most of the CO2).

CS

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On May 5, 2011, at 12:49 PM, michael Goo wrote:

> NSPS Option X

>

- > · Set a single[1] uniform emission rate or heat rate standard for all Da sources
- > · Standard would be somewhere in the range of 1600 (with trading) to 2100 (less or no trading) lbs CO2 per megawatt hour
- > · Use 2100 lbs CO2 per MW hour as straw proposal= roughly a heat rate of 10,000
- > o According to CATF guesstimates about 38% of existing capacity and would already meet this standard.
- > o About 28.5% of capacity are units with heat rates between 10,000- 10,500 and these represent the outer boundary of units that would attempt to meet the standard through improved efficiency
- > o The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet.
- > o Units above 10,500 heat rate would constitute about 34% of existing capacity.
- > o If all units above 10,500 heat rate retire BAU power systems emissions would drop by about 16%.
- >

- > · BDT for subpart Da would be met by 65% of the units already therefore EPA can argue that it represents BDT.
- > · All units would be able to meet this standard through conversion to natural gas boilers therefore no unit would be required to shut down to meet the standard. Query whether many units would choose to do so.
- > · Many units could meet the standard through natural gas co-firing—query whether units would choose to do so and at which level—one could adjust the standard level downward to tune the standard to achieve the desired policy outcome and taking natural gas co-firing into account. Not all units can natural gas co-fire.
- > · Standard could be made effective anywhere between 2018 and 2025. Use 2020 as a straw proposal.
- > · Could add a trading module for generation of credits within existing DA or within new and existing Da.
- > o Credits would be generated by setting a baseline for all existing sources using their 2008-2010 actual emissions.
- > o Sources with 2008-2010 baselines above the 10,000 heat rate could generate credits by emitting below 10,000 (including by shutting down) during the period between rule promulgation and the effective date of the standard (2020)
- > o A second tranche of credit generating units could be included—for instance those units with heat rates between 8000 and 10,000. It's not clear what the rationale would be for allowing those units to generate credits and not others. Modeling could help figure out if a second tranche is necessary or advisable.
- > · Remaining useful life safety valve: Instead of (or in addition to) trading, remaining useful life could be defined in terms of the impact of meeting the standard on a state (or RTO's) average electricity price. If a state determined that the impact of a specific unit meeting the standard would result in an electricity price impact greater than x% (say 2%) then the state could determine that the source in question should not meet the standard.
- > · State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.
- > · CCS—use demonstration provision to allow first 10 GW of CCS to meet an 1800 lbs CO₂ per MW hour and to generate credit for all generation below that level.
- >
- >
- >
- > [1] I believe this same approach could be used under the subcategorization approach being authored by Kevin, using differing efficiency levels.
- >
- >
- > From: michael Goo [Ex. 6 - Personal Privacy]
- > To: Conrad Schneider <cschneider@catf.us>
- > Sent: Thu, May 5, 2011 12:47:58 PM
- > Subject: Re: test
- >
- >
- >
- > From: Conrad Schneider <cschneider@catf.us>
- > To: Michael Goo [Ex. 6 - Personal Privacy]
- > Sent: Thu, May 5, 2011 12:47:16 PM
- > Subject: test
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- >
- > Conrad G. Schneider
- > Advocacy Director
- > Clean Air Task Force
- > cschneider@catf.us
- > www.catf.us
- > 169 Park Row
- > Brunswick, Maine 04011
- > 207/721-8676
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- >

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From: Conrad Schneider <cschneider@catf.us>
Sent: Tuesday, May 17, 2011 11:34 AM
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Status of NSPS algorithm

Michael-

I know you said that the NSPS briefing for the Administrator is today. Here is the latest on our development of a "function" for use in a EGU NSPS rule. NorthBridge has done several regression analyses of factors that drive unit value (which should be the major driver of remaining economic life) in their work for us to date. This analysis has determined that three factors account dominate unit value:

1. Unit size
2. Forward-looking capacity factor (projected in 2015), and
3. Original in-service date

Bruce is working these factors into a function that would produce annual tranches of roughly equal coal generation over a thirty-year period, beginning with the rule's initial compliance date.

We can then apply a compliance emissions rate (whatever we think is politically OK -- your 2100 lbs. or our 1350 lbs.) and run diagnostic analyses to characterize impacts and refine if useful.

We should have the initial function next week and initial diagnostic results the following week.

Thanks,
CS

Conrad G. Schneider
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From: Conrad Schneider <cschneider@catf.us>
Sent: Tuesday, May 10, 2011 8:30 PM
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Unit efficiency approach?

Hi Michael-

Joe will have some more data on gas co-firing to you shortly. In the meantime, can you send me a short description of the latest unit efficiency concept that is being seriously considered. I know Lorie presented one option late last week. As we have been discussing the concept of a unit efficiency standard internally among the crew at CATF, the concern has been raised that, if done incorrectly, such a standard might inadvertently end up extending the lives of coal units and therefore actually resulting in increased CO2 emissions (relative to BAU where the units might have retired and been replaced with new gas generation). It may be that ultimately EPA can't go further than a unit efficiency metric for existing units this go around, but we'd like to be sure at least that we aren't moving in the wrong direction. Can you send enough detail on what people are thinking that we can analyze the policy? We will hold close.

Thanks,
CS

Conrad G. Schneider
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Clean Air Task Force
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www.catf.us
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Brunswick, Maine 04011
207/721-8676
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From: Conrad Schneider <cschneider@catf.us>
Sent: Thursday, May 5, 2011 12:47 PM
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: test

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
cschneider@catf.us
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169 Park Row
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

From: Michael Goo Ex. 6 - Personal Privacy
Sent: Friday, November 15, 2013 6:18 PM
To: goo.michael@epa.gov
Subject: E and C letter

From: Energy and Commerce News [<mailto:EnergyandCommerceNews@mail.house.gov>]
Sent: Friday, November 15, 2013 4:14 PM
Subject: Committee Leaders Request Withdrawal of EPA's Proposed Power Plant Standards Citing Prohibition Under Energy Policy Act



COMMITTEE ON ENERGY AND COMMERCE

Chairman Fred Upton
113th Congress

FOR IMMEDIATE RELEASE

CONTACT: Press Office

November 15, 2013

(202) 226-4972

Committee Leaders Request Withdrawal of EPA's Proposed Power Plant Standards Citing Prohibition Under Energy Policy Act

***"...EPA's consideration of CCPI projects to determine that CCS for power plants
is 'adequately demonstrated' is prohibited."***

WASHINGTON, DC – House Energy and Commerce Committee leaders today wrote to Environmental Protection Agency Administrator Gina McCarthy expressing concerns regarding

EPA's proposed greenhouse gas New Source Performance Standards for new power plants that would require the installation of carbon capture and storage (CCS) technologies that are not commercially viable. The members believe the proposed standards go beyond the scope of the EPA's legal authority and are requesting the proposed rule be withdrawn.

EPA is proposing standards pursuant to Section 111 of the Clean Air Act, which provides that emissions standards must be achievable using "adequately demonstrated" technologies. EPA maintains that CCS technologies for coal-fired power plants have been "adequately demonstrated" based on three government-funded projects under construction or planned that are receiving assistance under the Department of Energy's Clean Coal Power Initiative (CCPI) and one other small-scale Canadian government-funded project. EPA Acting Assistant Administrator Janet McCabe confirmed the agency uses these projects as the basis for its determination during [questioning](#) at yesterday's Energy and Power Subcommittee [hearing](#).

While EPA is using these projects to justify its proposed standards, the Energy Policy Act of 2005 prohibits EPA from considering technology used at CCPI projects as being "adequately demonstrated" for purposes of Section 111 of the Clean Air Act. Based on these facts, the committee leaders concluded, "Under these provisions of the Energy Policy Act of 2005, EPA's consideration of CCPI projects to determine that CCS for coal-fired power plants is 'adequately demonstrated' is prohibited."

In the [letter](#) to McCarthy, House Energy and Commerce Committee Chairman Fred Upton (R-MI), Chairman Emeritus Joe Barton (R-TX), Energy and Power Subcommittee Chairman Ed Whitfield (R-KY), and subcommittee Vice Chairman Steve Scalise (R-LA) wrote, "In light of these statutory prohibitions, we request that the EPA's proposed rule, which has not yet been published in the Federal Register, be withdrawn. This will ensure that the agency does not propose standards beyond its legal authority. This will also ensure that stakeholders and the public will not have to incur additional costs to respond to a proposal that contravenes applicable law."

For a full copy of the letter to EPA, click [HERE](#).

From: Michael Goo Ex. 6 - Personal Privacy
Sent: Friday, November 15, 2013 6:25 PM
To: barron.alex@epa.gov; goo.michael@epa.gov
Subject: Fwd: E and C letter

Hey. Can you check on the skinny on this. Unfortunately this is a provision I am suspecting I negotiated with Bob Meyers. There is at least the Saskatchewan plant. It would be great if I could figure how DOE could help with this problem if there is a problem. Thanks. You can reply to the EPA account.

Sent from my iPhone

Begin forwarded message:

From: Michael Goo Ex. 6 - Personal Privacy
Date: November 15, 2013, 6:18:25 PM EST
To: "goo.michael@epa.gov" <goo.michael@epa.gov>
Subject: E and C letter

From: Energy and Commerce News [<mailto:EnergyandCommerceNews@mail.house.gov>]
Sent: Friday, November 15, 2013 4:14 PM
Subject: Committee Leaders Request Withdrawal of EPA's Proposed Power Plant Standards Citing Prohibition Under Energy Policy Act



COMMITTEE ON ENERGY AND COMMERCE

Chairman Fred Upton
 113th Congress

FOR IMMEDIATE RELEASE

CONTACT: Press Office

November 15, 2013

(202) 226-4972

Committee Leaders Request Withdrawal of EPA's Proposed Power Plant Standards Citing Prohibition Under Energy Policy Act

“...EPA's consideration of CCPI projects to determine that CCS for power plants is 'adequately demonstrated' is prohibited.”

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In the letter to McCarthy, House Energy and Commerce Committee Chairman Fred Upton (R-MI), Chairman Emeritus Joe Barton (R-TX), Energy and Power Subcommittee Chairman Ed Whitfield (R-KY), and subcommittee Vice Chairman Steve Scalise (R-LA) wrote, “In light of these statutory prohibitions, we request that the EPA's proposed rule, which has not yet been published in the Federal Register, be withdrawn. This will ensure that the agency does not propose standards beyond its legal authority. This will also ensure that stakeholders and the public will not have to incur additional costs to respond to a proposal that contravenes applicable law.”

For a full copy of the letter to EPA, click [HERE](#).

From: Michael Goo <[REDACTED] Ex. 6 - Personal Privacy>
Sent: Wednesday, November 20, 2013 8:35 AM
To: goo.michael@epa.gov
Subject: Fwd: SAB Urged to Review Adequacy of EPA's Basis for NSPS CCS Mandate

Sent from my iPhone

Begin forwarded message:

From: Jessica Holliday <[REDACTED] Ex. 6 - Personal Privacy>
Date: November 19, 2013, 3:21:38 PM EST
To: Michael Goo <[REDACTED] Ex. 6 - Personal Privacy>
Subject: SAB Urged to Review Adequacy of EPA's Basis for NSPS CCS Mandate

Daily News

SAB Urged To Review Adequacy Of EPA's Basis For NSPS CCS Mandate

Posted: November 18, 2013

An EPA Science Advisory Board (SAB) work group is asking SAB to review the agency's proposed climate utility rule because of questions about the adequacy of the peer review of certain studies used to justify the rule's mandate for carbon capture and sequestration (CCS) at coal-fired power plants, and of the rule's coal utility emission limit.

The work group's questions about the justifications for the rule -- outlined in a [Nov. 12 memorandum](#) from the group to the full SAB -- may boost critics of the new source performance standard (NSPS), who say the plan to require partial CCS at coal utilities will effectively bar construction of new coal plants because CCS is an unproven and costly technology, and that EPA cannot rely on existing CCS projects funded in part by federal dollars to justify the mandate.

If the SAB agrees with the work group's advice to review the utility NSPS, it would launch a high-profile forum over whether EPA has adequate justification to require new coal-fired

power plants to install CCS, which was the focus of a recent House Energy & Commerce Committee power panel hearing on the pending climate rule.

The fight centers on whether CCS is "adequately demonstrated" -- part of the Clean Air Act standard for EPA being able to mandate its use in the NSPS. EPA has cited some U.S. CCS projects, such as Southern Company's Kemper plant, to show technology is viable, though the agency also relies on non-federally funded projects to help justify CCS.

Republicans counter that a provision of the Energy Policy Act of 2005 (EPACT) prohibits EPA from finalizing the NSPS, because it bars reliance in rules on carbon capture projects funded under the law, which would include three of the facilities that EPA credits in the NSPS proposal as helping demonstrate CCS's viability. Environmentalists are pushing back on those claims, saying the energy law is not as restrictive as the GOP is claiming.

In a possible signal that Republicans recognize the limits of the EPACT's prohibition, House energy committee power panel Chairman Ed Whitfield (R-KY) and Sen. Joe Manchin (D-WV) are pushing legislation to require EPA to set the NSPS based on emissions of existing utilities that have received no government subsidies.

The ongoing fight in Congress over the viability of CCS could spill over to the SAB if the board agrees with the work group's call to review the climate NSPS. SAB will hold a Dec. 5-6 meeting in Washington, D.C., discuss the recent advice of the six-member work group, which has been tasked with looking at which rules might raise new scientific issues that could merit SAB review as part of an initiative launched early this year.

DOE Studies

The work group says the peer review of a handful of Department of Energy (DOE) studies that were cited in the NSPS that looked at the costs and performance of fossil fuel power plants, including the costs of operating those plants with and without CCS, "appears to be inadequate" and therefore warrants SAB review.

EPA staff told the work group that the studies, conducted by DOE's National Energy Technology Laboratory (NETL), "were all peer reviewed and EPA did not conduct additional peer review(s)."

But the work group questions the adequacy of that peer review, based on information provided to them by a DOE official who said parts of those studies did not go through peer review.

The NETL studies could be important to the rule because they form a component of EPA's statutory obligation to determine what qualifies as the best system of emission reduction (BSER) for carbon dioxide (CO₂) emissions from coal plants. Under the Clean Air Act, EPA sets performance standards that reflect BSER, which by statute must be "adequately demonstrated" and also take into account costs and energy performance.

EPA, in its Sept. 20 proposed NSPS, found that BSER for natural gas plants was using combined cycle turbines while BSER for coal utilities was partial CCS. It justified that CCS was BSER in part by identifying four coal-fired power plants with CCS in California, Mississippi, Texas and Canada that are in the advanced stage of construction, and in part based on studies that evaluated the state of CCS technology and its costs, including the NETL studies.

Beyond the peer review issues, the work group says the SAB should review the utility NSPS because it "could not determine, from the information provided by the Agency, whether there was an adequate scientific and technological basis for the proposed provisions to achieve emissions reductions in coal-fueled" power plants.

Issues with the rule that could merit SAB review, the work group says, are the scientific basis to develop separate standards for coal- and natural gas-fired power plants; whether CCS should qualify as BSER for coal-fired power plants; and the "underlying scientific assumptions around carbon pollution emissions technological controls."

An EPA spokeswoman says the agency is reviewing the memo, and DOE did not respond to a request for comment.

Peer Review

EPA staff told the SAB work group that the NETL studies were subject to "significant peer review," but the work group found potential issues with the peer review process after emailing DOE official Kristin Gerdes, who in an Oct. 31 email told SAB officials that some of studies cited in the NSPS had not gone through peer review.

One NETL study, "Cost and Performance Baseline for Fossil Fuel Energy Plants, Volume 1," was released in 2007, at which time it went through peer review by industry, academic and government experts. The report then went through extensive changes in a 2010 revision, and was revised again in September 2013 to adjust for inflation, but neither of those revisions went through peer review, and DOE did not have a publicly available description for the peer review process for the initial 2007 report, Gerdes says in the email.

A second study, a 2011 report that looked at the costs and performance of carbon dioxide capture for pulverized coal and integrated gasification combined cycle power plants, "did not undergo peer review," Gerdes says. The work group, in the Nov. 12 memorandum, says that "all information presented for coal-fueled sources" in the NETL study did not go through peer review, and concludes that the peer review of the studies "appears to be inadequate."

In the memorandum, the work group declined to recommend reviewing EPA's pending NSPS for the large fleet of existing power plants, which is expected to be proposed by June 2014. Through the initiative, the work group reviewed 11 "major" actions published in EPA's recent semi-annual regulatory agenda, published July 3.

But the work group says it does not recommend pursuing a SAB review of the pending NSPS for existing utilities because it expects the rule will not include major scientific or technical issues that are new to EPA.

Even so, the work group in the report flags several issues SAB could potentially review that relate to the existing source NSPS, such as "lessons learned" from the small number of 111(d) emission rules in effect, the scientific and technical assumptions states will make when craft their 111(d) implementation plans, and the scientific and technical basis for state-based supply-side and demand-side options to limit carbon dioxide emissions.

CCS Projects

Meanwhile, environmentalists are pushing back on the House GOP's claim that the 2005 EPACT that helped established funding for some coal-fired plants installing CCS would prohibit EPA from including those plants as justification that the technology met a Clean Air Act requirement of being "adequately demonstrated."

Four Republicans on the House Energy and Commerce Committee, including committee chair Fred Upton (R-MI) and Whitfield, in a Nov. 15 letter to EPA Administrator Gina McCarthy, said the energy law "prohibits EPA from setting a performance standard" that is based on technology achieved through a DOE-run program created by the law. They say EPA should withdraw the NSPS because it cited CCS projects that received funding from the program.

But David Hawkins, director of climate programs at the Natural Resources Defense Council, in a Nov. 18 blog post says they are "flat wrong" about the effect of the law, given that it only bars EPA from determining that a technology is adequately demonstrated if the determination is "solely" based on projects funded through the DOE program.

Hawkins says that for the utility NSPS, this is not the case, as EPA in its rule made its CCS determination based on decades of experience with large-scale industrial CO2 capture, studies by DOE and others about the viability of the technology for coal-fired power plants, and several projects moving forward that are using CCS. "The 2005 EPACT simply does not bar EPA from considering these projects as *part* of the basis for its conclusions," Hawkins wrote. "I was involved in the negotiations about this EPACT language and the word 'solely' was included specifically to prevent anyone from claiming that just because a project receives government funding, EPA must ignore the project."

Hawkins says that even Whitfield seems to understand that the law would not prevent EPA from considering the DOE-funded CCS projects, as in his recent draft legislation to limit EPA's utility NSPS authority, "he took pains to include language" to block the agency from using any government-supported projects in its NSPS. -- *Chris Knight*
(cknight@iwpnews.com)

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:15 PM
To: goo.michael@epa.gov
Subject: FW: Comments on NSPS option X

Sent from Yahoo! Mail for
 iPhone

From: Joseph Chaisson <joe100@gwi.net>;
To: Ex. 6 - Michael Goo
Cc: Conrad Schneider; Ex. 6 - Personal Privacy; Jonathan Banks <jbanks@catf.us>; Mike Fowler <mfowler@catf.us>;
Subject: Comments on NSPS option X
Sent: Thu, May 5, 2011 7:19:49 PM

Michael -
 Some thoughts:

1. Our understanding is that subpart Da only addresses units built after September 19, 1978 - far from the entire coal unit fleet. Our proposals and the analysis of the impact of a 10,000 HR/2100 lbs/MWH standard were based on the entire existing coal unit "fleet".

2. Is there some reason why your proposal is intended to apply only to subpart Da units??

3. If we can find a reliable data base on the extent and characteristics of gas co-firing capability installed at existing coal units, it may be possible to do a rough economic analysis of what fraction of existing units could meet the 10,000 HR 2100 lbs/MWh standard. This would take some time. But clearly, *some fraction* (currently unknown) of the ~35% of existing coal capacity and electricity generation that could probably not meet this standard solely through unit efficiency upgrades could do so with gas co-firing and without severe adverse economic consequences.

4. Key factors in the economics of gas co-firing to meet this standard would be:

Future gas prices, which are currently very low, but many see trending towards the \$7 range.

Coal costs - in general, PRB coal is much cheaper than Appalachian coal (today), but many units using eastern coal may have contract prices below current spot prices .

Natural gas pipeline access - is there pipeline within a reasonable connection cost distance that has sufficient capacity to supply the necessary gas?

Heat rate - very high heat rate units will have a much bigger burden than units close to the 10,500 HR level.

5. In general, proposal X becomes more plausible with gas co-firing, but it is difficult to characterize the impacts of this policy absent better data (primarily of gas access and existing gas co-firing installations) and considerably more analysis.

Please let us know if you have more questions.

Joe

NSPS Option X

- **Set a single 1 uniform emission rate or heat rate standard for all Da sources**
- **Standard would be somewhere in the range of 1600 (with trading) to 2100 (less or no trading) lbs CO₂ per megawatt hour**
- **Use 2100 lbs CO₂ per MW hour as straw proposal= roughly a heat rate of 10,000**
 - o According to CATF guesstimates about 38% of existing capacity and would already meet this standard.
 - o About 28.5% of capacity are units with heat rates between 10,000- 10,500 and these represent the outer boundary of units that would attempt to meet the standard through improved efficiency
 - o The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet capacity and electricity generation.
 - o Units above 10,500 heat rate would constitute about 34% of existing capacity and electricity generation.
 - o If all units above 10,500 heat rate retire BAU power systems emissions would drop by about 16%.
- **BDT for subpart Da [Da only applies to units that commenced construction after 9/19/1978] would be met by 65% of the units [all units, not just Da units] already therefore EPA can argue that it**

represents BDT.

- ☐ ☐ ☐ ☐ ☐ ☐ All units would be able to meet this standard through conversion to natural gas boilers [assuming they have reasonable access to natural gas pipelines - some units do not] therefore no unit would be required to shut down to meet the standard. Query whether many units would choose to do so.
- ☐ ☐ ☐ ☐ ☐ ☐ Many units could meet the standard through natural gas co-firing query whether units would choose to do so and at which level--- one could adjust the standard level downward to tune the standard to achieve the desired policy outcome and taking natural gas co firing into account. Not all units can natural gas cofire.
- ☐ ☐ ☐ ☐ ☐ ☐ Standard could be made effective anywhere between 2018 and 2025. Use 2020 as a straw proposal.

We have not given much thought to trading as we have been working on options that avoid trading.

- **Could add a trading module for generation of credits within existing DA or within new and existing Da.**
 - o Credits would be generated by setting a baseline for all existing sources using their 2008-2010 actual emissions.
 - o Sources with 2008-2010 baselines above the 10,000 heat rate could generate credits by emitting below 10,000 (including by shutting down) during the period between rule promulgation and the effective date of the standard (2020)
 - o A second tranche of credit generating units could be included--- for instance those units with heat rates between 8000 and 10,000. It's not clear what the rationale would be for allowing those units to generate credits and not others. Modeling could help figure out if a second tranche is necessary or advisable.
- ☐ ☐ ☐ ☐ ☐ ☐ Remaining useful life safety valve: Instead of (or in addition to) trading, remaining useful life could be defined in terms of the impact of meeting the standard on a state (or RTO's) average electricity price. If a state determined that the impact of a specific unit meeting the standard would result in an electricity price impact greater than x% (say 2%) then the state could determine that the source in question should not meet the standard.

- State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.**

- CCS use demonstration provision to allow first 10 GW of CCS to meet an 1800 lbs CO₂ per MW hour and to generate credit for all generation below that level. Why not give CCS full credit for reducing to 2100 lbs/MWH?**

[1] I believe this same approach could be used under the subcategorization approach being authored by Kevin, using differing efficiency levels.

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:15 PM
To: goo.michael@epa.gov
Subject: FW: Fwd: 10,000 heat rate policy

Sent from Yahoo! Mail for
iPhone

From: Conrad Schneider <cschneider@catf.us>;
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Fwd: 10,000 heat rate policy
Sent: Thu, May 5, 2011 6:24:04 PM

I'm resending Joe's original email. See below. Be careful to keep the units straight. There are:
 1. units; 2. capacity (MW or GW) ; and 3. generation (KWh or MWh or GWh).

Thanks,
CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
cschneider@catf.us
www.catf.us
 169 Park Row
 Brunswick, Maine 04011
 207/721-8676
 207/721-8696 (facsimile)

Begin forwarded message:

From: Joseph Chaisson <joe100@gwi.net>
Date: May 3, 2011 5:11:01 PM EDT
To: goo.michael@epamail.epa.gov
Cc: Conrad Schneider <cschneider@catf.us>, Jonathan Banks <jbanks@catf.us>
Subject: 10,000 heat rate policy

Michael -

1. A 10,000 heat rate policy would be expressed as about a 2100 lbs. CO2/MWH emissions rate (depending on the coal type used, the range would be about 2050 - 2120 lbs/MWH).

2. Using the most recent five year running average and assuming no CCS investment (see below for CCS discussion):

A. 38% of existing capacity and 37% of average energy production is from units that would already meet the "10,000 heat rate" standard. These units (~257) could continue to operate as is indefinitely under this standard.

B. Our best GUESS is that units with heat rates above 10,000 up to about 10,500 are probably the outer boundary of units that might invest in improved unit efficiency to meet the "10,000 heat rate standard". These units (~297) are about 28.5% of existing capacity and 28% of recent coal energy generation.

C. Combining A. & B., units producing about 65% of recent coal generation which are (the most economic existing units) could run indefinitely into the future under this policy

D. About 528 (49%) existing coal units having about 34% of existing capacity and 32% of recent coal energy generation would not be able to meet this standard.

E. If all units above 10,500 heat rate eventually retire in a "10,000 heat rate" standard policy and all the energy produce by these units is replaced with new natural gas units, projected BAU power system CO2 emissions might drop by about 16%

3. While adding a limited amount of CCS could meet this standard, the most economic units producing most of today's energy - as noted above - would not need to add CCS under this policy and we suspect that most units that can't practically meet the "10,000 heat rate" standard, would not be economic to retrofit with the partial CCS they would need to meet this standard.

4. There is some risk under this policy that if gas prices trended high (into the \$7-8 range or higher) that there might be some "total rebuilds" (new boiler, steam turbine, etc. of >10,500 heat rate units to lock-in an uncontrolled for GHG coal emissions rate - if this could be done at a lower cost than a new supercritical coal plant (possible in some cases) or if the new source NSPS precludes new uncontrolled coal unit development.

let me know if you have any questions on this.

Joe

From: Ex. 6 - Michael Goo
Sent: Tuesday, August 20, 2013 9:23 AM
To: goo.michael@epa.gov
Subject: FW: Re: Here you go

Sent from Yahoo! Mail for
 iPhone

From: Jim Massie <jmassie@alpinegroup.com>;
To: Ex. 6 - Michael Goo
Subject: Re: Here you go
Sent: Sat, Mar 19, 2011 2:18:07 PM

Good morning. Sorry hard to get a hold of. I'm busy for some reason. Hope your well.

From: michael Goo Ex. 6 - Personal Privacy
To: Jim Massie
Sent: Sat Mar 19 10:16:03 2011
Subject: Re: Here you go

thanks jim I will check this out.....

From: Jim Massie <jmassie@alpinegroup.com>
To: Ex. 6 - Michael Goo
Sent: Thu, March 17, 2011 11:30:13 AM
Subject: FW: Here you go

The question is when we were arguing the biodiesel section wasn't the NGO interest in halting new palm imports and development? Right. If so looks like something might be getting under the door.

The EPA is examining the life cycle for palm oil. In order for the feedstock to qualify as Biomass-based Diesel or as an Advanced Biofuel the lifecycle, which includes an analysis of indirect land use must reduce greenhouse gas (GHG) emissions by more than 50 percent when compared to the 2005 diesel fuel baseline. Up to this point, EPA

has analyzed the lifecycle of soybean oil (57%) and canola oil (50.2%). It is anticipated the lifecycle for palm oil will be next out the door.

EPA has developed a methodology that combines four different models and for the first time in the history of lifecycle modeling includes an analysis of indirect land use change.

Issue: Whether palm oil from Indonesia and Malaysia will meet or exceed the 50% GHG lifecycle.

It doesn't appear that it should. In addition to the indirect land use issues palm oil has two primary weak points before the indirect analysis is applied:

1. All palm oil mills produce a number of environmental outputs including palm oil mill effluent (POME), which is the sludge from the oil and waste water left after the crude palm oil (CPO) is processed. An average of 3.05 tonnes of POME is produced for every tonnes of CPO. The POME is stored in ponds where biogas is emitted consisting of methane and carbon dioxide. These emissions can be as high as 25% of the life cycle assessment (LCA) emissions from diesel fuel. Currently, less than 5% of the mills in Malaysia have not done anything to eliminate these emissions.
2. The other issue is land use. Some peat plantations are on land that was a peat bog, and the bog has been drained to allow for the plantation of the palm. This process can create very high land use change emissions. For the existing industry these would be direct emissions. The estimates of GHG emissions from peat bog draining range from 71,000 to 500,000 g/GJ, which means rather unfavorable land use treatment. The emissions need to be less than 45,000 g/GJ *including ILUC* to meet the threshold.

Documentation to support these statements is available. Let me know if you need them.

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:16 PM
To: goo.michael@epa.gov
Subject: FW: Re: test

Sent from Yahoo! Mail for
iPhone

From: Conrad Schneider <cschneider@catf.us>;
To: michael Goo; Ex. 6 - Personal Privacy
Subject: Re: test
Sent: Thu, May 5, 2011 6:21:23 PM

Michael-

One thing right off to bat. Red flag: you need to keep your units straight. There are units, capacity, and generation and they are all different. On page one of Option X, you say "The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet. That is not correct. They constitute 65% of the generation. They constitute a much smaller percentage of units. Paul is counting the number and percentage of units right now. Remember: you could shut down the smallest, least efficient half of the coal units in the U.S. but lose only 10-15% of the generation. Which is to say that a relatively small percentage of larger, more efficient units generate most of the power (and emit most of the CO2).

CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
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169 Park Row
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

On May 5, 2011, at 12:49 PM, michael Goo wrote:

> NSPS Option X

>

- > · Set a single[1] uniform emission rate or heat rate standard for all Da sources
- > · Standard would be somewhere in the range of 1600 (with trading) to 2100 (less or no trading) lbs CO2 per megawatt hour
- > · Use 2100 lbs CO2 per MW hour as straw proposal= roughly a heat rate of 10,000
- > o According to CATF guesstimates about 38% of existing capacity and would already meet this standard.
- > o About 28.5% of capacity are units with heat rates between 10,000- 10,500 and these represent the outer boundary of units that would attempt to meet the standard through improved efficiency
- > o The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet.
- > o Units above 10,500 heat rate would constitute about 34% of existing capacity.
- > o If all units above 10,500 heat rate retire BAU power systems emissions would drop by about 16%.
- >
- > · BDT for subpart Da would be met by 65% of the units already therefore EPA can argue that it represents BDT.
- > · All units would be able to meet this standard through conversion to natural gas boilers therefore no unit would be required to shut down to meet the standard. Query whether many units would choose to do so.
- > · Many units could meet the standard through natural gas co-firing*query whether units would choose to do so and at which level---one could adjust the standard level downward to tune the standard to achieve the desired policy outcome and taking natural gas co firing into account. Not all units can natural gas cofire.
- > · Standard could be made effective anywhere between 2018 and 2025. Use 2020 as a straw proposal.
- > · Could add a trading module for generation of credits within existing DA or within new and existing Da.
- > o Credits would be generated by setting a baseline for all existing sources using their 2008-2010 actual emissions.
- > o Sources with 2008-2010 baselines above the 10,000 heat rate could generate credits by emitting below 10,000 (including by shutting down) during the period between rule promulgation and the effective date of the standard (2020)
- > o A second tranche of credit generating units could be included---for instance those units with heat rates between 8000 and 10,000. It's not clear what the rationale would be for allowing those units to generate credits and not others. Modeling could help figure out if a second tranche is necessary or advisable.
- > · Remaining useful life safety valve: Instead of (or in addition to) trading, remaining

useful life could be defined in terms of the impact of meeting the standard on a state (or RTO*s) average electricity price. If a state determined that the impact of a specific unit meeting the standard would result in an electricity price impact greater than x% (say 2%) then the state could determine that the source in question should not meet the standard.

> · State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.

> · CCS*use demonstration provision to allow first 10 GW of CCS to meet an 1800 lbs CO2 per MW hour and to generate credit for all generation below that level.

>

>

>

> [1] I believe this same approach could be used under the subcategorization approach being authored by Kevin, using differing efficiency levels.

>

>

> From: michael Goo [Ex. 6 - Personal Privacy]

> To: Conrad Schneider <cschneider@catf.us>

> Sent: Thu, May 5, 2011 12:47:58 PM

> Subject: Re: test

>

>

>

> From: Conrad Schneider <cschneider@catf.us>

> To: Michael Goo [Ex. 6 - Personal Privacy]

> Sent: Thu, May 5, 2011 12:47:16 PM

> Subject: test

>

>

> Conrad G. Schneider

> Advocacy Director

> Clean Air Task Force

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From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Tuesday, August 20, 2013 4:49 PM
To: goo.michael@epa.gov
Subject: Fw: Fwd: [INTL CCS] INTL CCS: EPA to propose utility carbon rules next year (USA)

----- Forwarded Message -----

From: Conrad Schneider <cschneider@catf.us>
To: Michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, November 18, 2011 7:27 AM
Subject: Fwd: [INTL CCS] INTL CCS: EPA to propose utility carbon rules next year (USA)

Hi Michael-

See article about LJ's statement on NSPS below. My guys flagged her comment that CCS "has a long way to go" and "it can be years, maybe a decade or more, until we have the technology available at commercial scale." Not only is this incorrect, as our briefing for staff last summer demonstrated, but seems ill-advised if EPA has sent to OMB a 111(b) package with an emission rate that can only be met by gas or coal with partial CCS. I'm on the Hill all day doing briefings on the job-creating potential of EPA air regs, but could talk before 10 a.m. or later on > 5 p.m.

Thanks,
CS

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cschneider@catf.us

Sent from my iPad

Begin forwarded message:

From: Kurt Waltzer <kwaltzer@catf.us>
Date: November 18, 2011 1:03:33 AM EST
To: coaltrans <coaltransition@lists.catf.us>
Subject: Fwd: [INTL CCS] INTL CCS: EPA to propose utility carbon rules next

year (USA)

Jackson reiterates CCS "has a long way to go"

Begin forwarded message:

From: Chris Smith <csmithcommunications@gmail.com>
Subject: [INTL CCS] INTL CCS: EPA to propose utility carbon rules next year (USA)
Date: November 17, 2011 9:37:08 PM EST
To: international-engco-ccs-network@googlegroups.com

CCS brought into the discussion . . . EPA's Jackson comments: "It can be years, maybe a decade or more, until we have the technology available at commercial scale."

--

Chris Smith
 Smith Communications
csmithcommunications@gmail.com | 817.229.1320

EPA to propose utility carbon rules next year

4:15pm EST

WASHINGTON (Reuters) - The top U.S. environmental regulator will propose early next year twice-delayed rules on greenhouse gas emissions from power plants, she told the energyNOW television show.

"I can't tell you what the regulations say right now, but what we are planning to do is release them early next calendar year," Lisa Jackson, the Environmental Protection Agency administrator, told the program in a segment seen by Reuters that is to be broadcast over the weekend.

The EPA in June delayed the proposed rules on power plants, which are the largest source of U.S. greenhouse gas emissions, saying it needed more time after talking with businesses, states and green groups. It delayed them again in September.

Republicans in the House of Representatives have waged a war on EPA clean-air regulations, saying such rules will kill jobs and add costs to businesses suffering in a battered economy.

In September, President Barack Obama directed the EPA to delay a major rule on smog-forming pollutants until 2013, forcing Jackson to embrace a George

W. Bush-era smog rule she previously described as legally indefensible. The move led some environmentalists and health groups to worry the administration would subject other clean-air rules to long delays. But earlier this month, the EPA sent the planned rules on carbon emissions from new power plants to the White House's Office of Management and Budget for review, a process that can take about 90 days. The rules could force big coal-burning utilities, including Southern Co and American Electric Power, to use more natural gas, which is lower in carbon emissions, or to invest more in wind and solar power. Jackson has said the agency's coming slate of clean-air rules can add jobs in technology to deal with smokestack emissions. Lobbyists for utilities, however, say there is no affordable technology yet that can be bolted on to power plants to cut greenhouse gases. A process to bury carbon dioxide emissions underground, known as carbon capture and sequestration or CCS, has been suggested as a way to help utilities cut emissions in coming years. But Jackson, whose agency looked at CCS as it developed the rules, said the technology has a long way to go. "It can be years, maybe a decade or more, until we have the technology available at commercial scale," she said. Cheaper options exist to cut emissions, she said. "It would be shortsighted, or you would have to have blinders on, not to look at the fact that there are other game-changers out there like our nation's supply of natural gas that are going to be important as people look at where they want to make investment decisions," she said. Lobbyists for the power industry say energy markets, not the EPA, should push utilities toward natural gas, adding that the chemical industry is also eyeing new natural gas supplies, which could eventually push up prices for the fuel. (Reporting by [Timothy Gardner](#); Editing by [Dale Hudson](#))

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 3:59 PM
To: goo.michael@epa.gov
Subject: FW: Here you go

Sent from Yahoo! Mail for
iPhone

From: Jim Massie <jmassie@alpinegroup.com>;
To: Ex. 6 - Michael Goo
Subject: FW: Here you go
Sent: Thu, Mar 17, 2011 3:30:13 PM

The question is—when we were arguing the biodiesel section wasn't the NGO interest in halting new palm imports and development? Right. If so looks like something might be getting under the door.

The EPA is examining the life cycle for palm oil. In order for the feedstock to qualify as “Biomass-based Diesel” or as an “Advanced Biofuel” the lifecycle, which includes an analysis of indirect land use must reduce greenhouse gas (GHG) emissions by more than 50 percent when compared to the 2005 diesel fuel baseline. Up to this point, EPA has analyzed the lifecycle of soybean oil (57%) and canola oil (50.2%). It is anticipated the lifecycle for palm oil will be next out the door.

EPA has developed a methodology that combines four different models and for the first time in the history of lifecycle modeling includes an analysis of indirect land use change.

Issue: Whether palm oil from Indonesia and Malaysia will meet or exceed the 50% GHG lifecycle.

It doesn't appear that it should. In addition to the indirect land use issues palm oil has two

primary weak points before the indirect analysis is applied:

1. All palm oil mills produce a number of environmental outputs including palm oil mill effluent (POME), which is the sludge from the oil and waste water left after the crude palm oil (CPO) is processed. An average of 3.05 tonnes of POME is produced for every tonnes of CPO. The POME is stored in ponds where biogas is emitted consisting of methane and carbon dioxide. These emissions can be as high as 25% of the life cycle assessment (LCA) emissions from diesel fuel. Currently, less than 5% of the mills in Malaysia have not done anything to eliminate these emissions.
2. The other issue is land use. Some peat plantations are on land that was a peat bog, and the bog has been drained to allow for the plantation of the palm. This process can create very high land use change emissions. For the existing industry these would be direct emissions. The estimates of GHG emissions from peat bog draining range from 71,000 to 500,000 g/GJ, which means rather unfavorable land use treatment. The emissions need to be less than 45,000 g/GJ *including ILUC* to meet the threshold.

Documentation to support these statements is available. Let me know if you need them.

From: **Ex. 6 - Michael Goo**
Sent: Monday, August 19, 2013 4:06 PM
To: goo.michael@epa.gov
Subject: FW: Initial reaction to NSPS concepts

Sent from Yahoo! Mail for
iPhone

From: Conrad Schneider <cschneider@catf.us>;
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: Initial reaction to NSPS concepts
Sent: Sat, May 21, 2011 2:56:54 PM

Hi Michael-

Im out the door for a week in sunny California with my wife. But, I wanted to give you some brief reactions from CATF staff to your read out from the meeting with the Administrator. By separate message, I sent you our latest thinking on the "algorithm". Contact Joe or Jonathan if you have questions in my absence. Joe says that we should have some diagnostics for you next week. The algorithm should be able to work with any target rate (including your 2100). Hopefully, we'll have some more information on gas co-firing next week as well. Joe is working with Alex Barron on that. With respect OAR's idea for new source NSPS -- 1850 now and 350 in 2025, my folks LOVED it (assuming it also applies to gas plants). We believe that we can help EPA build a strong record in support of setting the 350 standard in 2025. We are looking at some issues e.g., what about New England where there may be little CO2 pipeline or sequestration potential. But, in general, this is just the kind of standard we need to drive deployment of cleaner coal and gas technology and level the playing field with other zero- or near zero-power options. Let's discuss how we can support. People also really liked your demonstration provision concept. We are doing some economic analysis on it to see whether we think that will be enough to drive CCS deployment, but in some places the answer likely is yes. We don't like Sussman's idea of intra-company trading to meet the 111(b) standard (unless it is limited to your demonstration concept). We can discuss. Ann is looking into some of the legal issues implicated by all of this and we'll be back to you about that. Talk to you end of next week when I'm back in the office.

Cheers,
CS

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From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:05 PM
To: goo.michael@epa.gov
Subject: FW: More Gas co_firing information

Sent from Yahoo! Mail for
iPhone

From: Joseph Chaisson <joe100@gwi.net>;
To: michael Goo Ex. 6 - Personal Privacy
Cc: Conrad Schneider <cschneider@catf.us>;
Subject: More Gas co_firing information
Sent: Mon, May 23, 2011 10:12:27 PM

Michael -

To test whether a policy driving gas co-firing could have potentially cause gas price spikes, we had a simple analysis conducted as follows:

1. Question posed:

For projected 2015 coal energy generation for the NorthBridge Expected
MACT case and at both the high gas prices - (2205 Twh) and low gas
prices (2046 Twh):

Determine the amount of increased annual natural gas consumption that would
occur under the following:

5% gas co-firing

10% gas co-firing

15% gas co-firing

Co-firing at these levels would be assumed to occur at all units.

Check with Rui on what we should assume (as a rough estimate) for efficiency of gas to electricity when co-fired (this would presumably vary by boiler heat rate - but all I need now is a rough across-the-board estimate) .

The point of this is to determine if the potential increase in gas use that might be driven in this range of co-firing is large enough to suggest one would need to phase such requirements in carefully over time to avoid causing severe gas price spikes.

2. Answer:

The attached spreadsheet has my calculations of the increased gas consumption from co-firing with coal. I didn't have the Northbridge model runs -- just their summary powerpoint -- so I needed to make a lot of assumptions to get to an endpoint. My conclusions are as follows:

Increased Gas Consumption

	<i>Base Gas Price</i>	<i>Low Gas Price</i>	
<i>5% Co-Fire</i>	<i>1.1</i>	<i>1.0</i>	<i>TCF</i>
<i>10% Co-Fire</i>	<i>2.3</i>	<i>2.1</i>	<i>TCF</i>
<i>15% Co-Fire</i>	<i>3.4</i>	<i>3.1</i>	<i>TCF</i>

I haven't assumed any efficiency change from co-firing gas. It seems to me that impact is likely to be small compared to the other uncertainties here. I couldn't find in the Northbridge powerpoint any table of coal heat inputs to the power sector, so I calculated that from the coal TWH figure using a heat rate of 10,500.

3. Implications:

The estimated increases in natural gas consumption from an "across-the-board" gas co-firing policy are large enough to potentially cause gas price spikes, if these levels of co-firing happened quickly with compliance at a single date. Additional gas consumption might result

from additional coal unit retirements driven by such a gas co-firing policy.

So the implementation/compliance details will matter in such a policy.

From: **Ex. 6 - Michael Goo**
Sent: Monday, August 19, 2013 4:11 PM
To: goo.michael@epa.gov
Subject: FW: More info on coal units with gas-cofiring

Sent from Yahoo! Mail for
 iPhone

From: Joseph Chaisson <joe100@gwi.net>;
To: **Ex. 6 - Michael Goo**
Cc: Conrad Schneider <cschneider@catf.us>; Jonathan Banks <jbanks@catf.us>;
Subject: More info on coal units with gas-cofiring
Sent: Mon, May 9, 2011 2:11:20 PM

Michael -
 From David Schoengold:

The overall capacity factors are as follows:

All coal-fired units -- 68.4%

Gas Co-Fired Units (Overall Average -- total MWH/Total MW) -- 53.2%

Average of Gas Co-Fired Units (average of CFs) -- 47.5%

3. Average heat rate plus possibly a chart showing distribution of heat rates?

All Coal-Fired Units -- 10,279

Gas Co-Fired Units (Overall Average -- total MMBTU/Total MWH) -- 11,110

Average of Gas Co-Fired Units (average of HRs) -- 11,635

So it's pretty clear that the gas co-fired units are less efficient and run less than the overall coal fleet.

More analysis to come tomorrow

Joe

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:00 PM
To: goo.michael@epa.gov
Subject: FW: RE: Here you go

Sent from Yahoo! Mail for
iPhone

From: Jim Massie <jmassie@alpinegroup.com>;
To: michael Goo Ex. 6 - Personal Privacy
Subject: RE: Here you go
Sent: Mon, Mar 21, 2011 2:07:08 PM

The more the merrier. Let me know when you can break free for lunch.

From: michael Goo Ex. 6 - Personal Privacy
Sent: Saturday, March 19, 2011 10:28 AM
To: Jim Massie
Subject: Re: Here you go

I will check internally but also if you think its not a problem alert some of my
enviro friends to this problem---sound ok to you?

From: Jim Massie <jmassie@alpinegroup.com>
To: Ex. 6 - Michael Goo
Sent: Sat, March 19, 2011 10:18:07 AM
Subject:

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:00 PM
To: goo.michael@epa.gov
Subject: FW: Re: Here you go

Sent from Yahoo! Mail for
iPhone

From: Jim Massie <jmassie@alpinegroup.com>;
To: Ex. 6 - Michael Goo
Subject: Re: Here you go
Sent: Sat, Mar 19, 2011 2:18:07 PM

Good morning. Sorry hard to get a hold of. I'm busy for some reason. Hope your well.

From: michael Goo Ex. 6 - Personal Privacy
To: Jim Massie
Sent: Sat Mar 19 10:16:03 2011
Subject: Re: Here you go

thanks jim I will check this out.....

From: Jim Massie <jmassie@alpinegroup.com>
To: Ex. 6 - Michael Goo
Sent: Thu, March 17, 2011 11:30:13 AM
Subject: FW: Here you go

The question is when we were arguing the biodiesel section wasn't the NGO interest in halting new palm imports and development? Right. If so looks like something might be getting under the door.

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Documentation to support these statements is available. Let me know if you need them.

From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:08 PM
To: goo.michael@epa.gov
Subject: FW: Status of NSPS algorithm

Sent from Yahoo! Mail for
iPhone

From: Conrad Schneider <cschneider@catf.us>;
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Status of NSPS algorithm
Sent: Tue, May 17, 2011 3:33:43 PM

Michael-

I know you said that the NSPS briefing for the Administrator is today. Here is the latest on our development of a "function" for use in a EGU NSPS rule. NorthBridge has done several regression analyses of factors that drive unit value (which should be the major driver of remaining economic life) in their work for us to date. This analysis has determined that three factors account dominate unit value:

1. Unit size
2. Forward-looking capacity factor (projected in 2015), and
3. Original in-service date

Bruce is working these factors into a function that would produce annual tranches of roughly equal coal generation over a thirty-year period, beginning with the rule's initial compliance date.

We can then apply a compliance emissions rate (whatever we think is politically OK -- your 2100 lbs. or our 1350 lbs.) and run diagnostic analyses to characterize impacts and refine if useful.

We should have the initial function next week and initial diagnostic results the following week.

Thanks,
CS

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From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:07 PM
To: goo.michael@epa.gov
Subject: FW: Status of NSPS algorithm

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From: Conrad Schneider <cschneider@catf.us>;
To: Michael Goo Ex. 6 - Personal Privacy
Subject: Status of NSPS algorithm
Sent: Tue, May 17, 2011 3:33:43 PM

Michael-

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From: **Ex. 6 - Michael Goo**
Sent: Monday, August 19, 2013 4:10 PM
To: goo.michael@epa.gov
Subject: FW: Unit efficiency approach?

Sent from Yahoo! Mail for
iPhone

From: Conrad Schneider <cschneider@catf.us>;
To: Michael Goo **Ex. 6 - Personal Privacy**
Subject: Unit efficiency approach?
Sent: Wed, May 11, 2011 12:30:27 AM

Hi Michael-

Joe will have some more data on gas co-firing to you shortly. In the meantime, can you send me a short description of the latest unit efficiency concept that is being seriously considered. I know Lorie presented one option late last week. As we have been discussing the concept of a unit efficiency standard internally among the crew at CATF, the concern has been raised that, if done incorrectly, such a standard might inadvertently end up extending the lives of coal units and therefore actually resulting in increased CO2 emissions (relative to BAU where the units might have retired and been replaced with new gas generation). It may be that ultimately EPA can't go further than a unit efficiency metric for existing units this go around, but we'd like to be sure at least that we aren't moving in the wrong direction. Can you send enough detail on what people are thinking that we can analyze the policy? We will hold close.

Thanks,
CS

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From: Ex. 6 - Michael Goo
Sent: Monday, August 19, 2013 4:12 PM
To: goo.michael@epa.gov
Subject: FW: Very rough estimate of coal units that have some gas co-firing capability - 30%

Sent from Yahoo! Mail for
iPhone

From: Joseph Chaisson <joe100@gwi.net>;
To: Ex. 6 - Michael Goo
Cc: Conrad Schneider Ex. 6 - Personal Privacy Jonathan Banks <jbanks@catf.us>;
Subject: Very rough estimate of coal units that have some gas co-firing capability - 30%
Sent: Thu, May 5, 2011 7:41:36 PM

May have better take on this
tomorrow.

From: michael Goo Ex. 6 - Personal Privacy
Sent: Friday, May 10, 2013 5:38 PM
To: goo.michael@epa.gov
Subject: Fw: 316(b) Update

----- Forwarded Message -----

From: Michael Bradley <mbradley@mjb Bradley.com>

To: Ex. 6 - Michael Goo

Sent: Thursday, April 5, 2012 10:27 AM

Subject: FW: 316(b) Update

See the EEI email below which claims that they want the NODA published expeditiously. Dominion, PSEG, NextEra as well as other companies have contacted to request that OMB the NODA be published ASAP.

From: Shea, Quin [<mailto:QShea@eei.org>]

Sent: Thursday, April 05, 2012 9:27 AM

To: Bozek, Richard; Dominguez, Joseph (joseph.dominguez@exeloncorp.com); Labauve, Randy (randall_r_labauve@fpl.com); Svenson, Eric (Eric.Svenson@pseg.com); Lavinson, Melissa (melissa.lavinson@pge-corp.com); Matty, Bob (robert.matty@exeloncorp.com); Donohue, William J. (william.donohue@exeloncorp.com); Trojecki, Amy M. (amy.trojecki@exeloncorp.com); Ludecke, Kristen; Strickland, Mark F. (Mark.Strickland@pseg.com); Butts, Rayburn (ray_butts@fpl.com); Boyce, Cari (Cari.boyce@pgnmail.com); Loomis, Ann W (ann.w.loomis@dom.com); jxb@nei.org; Shannon.Banaga@pseg.com; Foster, Christopher

Cc: Bulleit, Kristy (kbulleit@hunton.com); Carrie Jenks; Simone, Hannah (hss@nei.org); Skaff Ph. D., William (wgs@nei.org); Obenshain, Karen; Bartholomot, Henri; Hunt, Meg; Ball, Sarah; Holdsworth, Eric

Subject: 316(b) Update

Importance: High

I hope you are enjoying some quality down time with your families during the Congressional recess and holiday season, both of which would be a little more enjoyable if we had some solid intelligence on where things stand with the NODA and our key issues. The balance of this note provides a few snippets for your consideration, as well as an initial draft of a new outreach piece developed with Congressional audiences in mind.

All of you likely are aware that last month's CEO meetings went well; our principals were on message and had done their homework, and Joe was like a fact-generating machine. Our subsequent game plan was to wait for the NODA to be issued presumably within a couple of weeks of our meetings and then to comment on same, to determine what additional analytical tasks might be appropriate, to pursue staff-level meetings with key agency staff, and to set up another round of CEO-level meetings. However, the NODA has been held up in part because of OMB objections and the recess/holiday schedule isn't helping matters. Importantly, several of us have

heard in the past few days from our Administration colleagues that it's unclear to them whether industry wants the NODA to come out. I'm not sure about the basis for that comment as it is contrary to specific conversations that occurred during the CEO meetings and in more recent conversations with key agency and WH staff. It would be useful to compare notes on this point. For its part, EEI is seeking expeditious issuance of the NODA within the parameters requested by the CEOs, i.e., a *de facto* supplemental proposal that focuses on eliciting input on key substantive issues, but that is devoid of any outcome-determinative language that may have existed in the EPA draft. Finally, it's our understanding that there is an internal EPA meeting today to discuss the 316(b) issue, so hopefully we will get some clarification thereafter.

Separately, attached for your consideration is a draft document for Congressional audiences that perhaps also could be used in other forums. It is intended to be a very simple, clean messaging document that nonetheless is consistent with our core tenets.

Thanks for everyone's continued efforts on this important issue. I suggest sharing new information within the group as it becomes available.

From: michael Goo { Ex. 6 - Personal Privacy }
Sent: Friday, May 10, 2013 5:38 PM
To: goo.michael@epa.gov
Subject: Fw: 361B Contingent Evaluation
Attach: One-pager.pdf

----- Forwarded Message -----

From: Michael Bradley <mbradley@mjb Bradley.com>

To: { Ex. 6 - Michael Goo }

Sent: Friday, September 28, 2012 8:25 AM

Subject: FW: 361B Contingent Evaluation

FYI

COMPARISON OF QUANTIFIED BENEFITS AND COSTS FROM §316(b) PROPOSED RULE AND EPA SURVEY

	Screens on MOST plants	Screens on ALL plants	Screens & CCC on ALL plants
<i>Conventional Cost Benefit from Proposed Rule:</i>			
Annualized Costs (2011\$ million)	\$389	\$466	\$4,934
Annualized Benefits	\$15.9	\$16.3	\$97.0
Benefits to Costs Ratio	24 to 1 <i>Negative</i>	29 to 1 <i>Negative</i>	51 to 1 <i>Negative</i>
<i>Mail Survey from NODA:</i>			
Annualized Costs (2011\$ million)	\$389	\$466	\$4,934
Implied Benefits from the Survey (2011\$ million)	\$2,228	\$2,275	\$7,449
Benefits to Costs Ratio	5.7 to 1 <i>Positive</i>	4.9 to 1 <i>Positive</i>	1.5 to 1 <i>Positive</i>
<i>Comparison of Benefits from Proposed Rule and Survey:</i>			
Factor of Increase	140 times	140 times	77 times
Percentage Increase	14,000%	14,000%	7,700%

BACKGROUND

- In April 2011, as the result of a discretionary settlement with the environmental group Riverkeepers, EPA issued a proposed rule under Section 316(b) of the Clean Water Act, which requires cooling water intake structures to reflect the best technology available (“BTA”) to minimize adverse environmental impacts. (“Proposed Rule” or “316(b) Rule”)
- In the Proposed Rule, EPA assumes that reductions in impingement (organisms impinged against screens on intake structures) and entrainment (organisms carried through the cooling water system) will “minimize adverse environmental impact.” However, the administrative record does not contain any evidence that cooling water intake structures actually impair fish populations or communities.
- EPA proposed that advanced traveling screens were BTA for impingement, and proposed that state permitting directors determine BTA for entrainment on a site-specific basis considering costs and benefits. EPA sought comment on whether all existing facilities should be forced to have cooling towers--a massive cost and reliability concern.
- EPA calculated the \$466 million annual costs of the preferred option outweigh \$16.3 million annual benefits by a ratio of 29 to 1, with a total cost of more than \$30 billion. EPA based its benefits on assumed market impacts on the commercial and recreational fishing industries.

- EPA noted that its analysis was not complete because it did not fully monetize “non-use” benefits. “Non-use” benefits are purely subjective values that individuals place on protecting the existence of a resource that they never intend to directly use or interact with in some way.
- EPA conducted a nationwide public opinion survey asking individuals how much they are hypothetically willing to pay to avoid harm to fish. At the 11th hour, EPA now proposes in a recent Notice of Data Availability (“NODA”) to entirely replace its conventional benefits analysis with the survey results.
- The annual benefits from the mail survey are now \$2.3 billion for the proposed option, or almost 140 times or 14,000% greater than EPA's conventional analysis. Further, this opens the door to CLAIMED ANNUAL BENEFITS OF \$7.5 BILLION JUSTIFYING HUNDREDS OF BILLIONS OF DOLLARS OF COSTS ON ENERGY CUSTOMERS.

IMMEDIATE REGULATORY THREAT POSED BY CONTINGENT VALUATION OF NON-USE BENEFITS

- The survey results provide benefit “overhang” to justify extremely expensive controls, e.g. cooling towers, either in the rule or based on state-by-state determinations.
- Where EPA appeared to give with the one hand by allowing site-specific entrainment decisions by the states, it is taking away with the other because states may be required to use surveys to justify their decisions. This is shaping up as NSR on steroids.
- The exaggerated benefit valuations would provide a basis for challenges by environmental groups to permits that did not require closed cycle cooling, and open the door to a whole new area of tort litigation.
- Due to the prohibitive expense to install towers (up to \$1 billion per tower in some cases) many plants will opt to close and system reliability will be put in jeopardy.
- Use of the survey violates the Information Quality Act.
- Use of the survey will also result in litigation challenging the underlying basis of the rule as a result of the lack of record support for the survey’s factual assertions regarding the environmental benefits of the rule.

BROADER REGULATORY THREATS POSED BY ALLOWING VALUATION OF NON-USE BENEFITS IN REGULATION

- Non-use valuation has never been used to justify costs of a major rulemaking. Allowing non-use benefits methodologies in this rule would set a dangerous precedent.
- There are a number of pending and prospective critical water quality issues where the application of seriously flawed non-use benefit methodologies could impose enormous unjustified costs, e.g., the steam effluent limitation guidelines, waters of the U.S. jurisdiction, and water consumption policies.
- This also could be used to justify a dramatic shift in air, natural resource, and energy regulations and policies.
- GIVEN THE WILDLY INFLATED RESULTS OF SURVEYS, ANY AGENCY COULD JUSTIFY ANY REGULATION FOR ANY REASON AT ANY COST.

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, May 9, 2013 5:00 PM
To: goo.michael@epa.gov
Subject: Fw: CCS projects

----- Forwarded Message -----

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: Michael Goo [Ex. 6 - Personal Privacy]
Sent: Wednesday, October 26, 2011 8:15 PM
Subject: CCS projects

Here is info on one of the projects the one in Idaho. It has a CO2 limit in its permit. It also appears that it is no longer an EGU.

<http://www.martenlaw.com/newsletter/20091214-permit-with-enforceable-co2-limits>

First State Air Permit With Enforceable CO2 Limits Issued For Idaho Coal-Fueled Fertilizer Plant

By Svend Brandt-Erichsen
 December 14, 2009

A proposed Idaho plant that will gasify coal as a feedstock for fertilizer has become the first coal-fueled facility in the U.S. to accept enforceable limits on carbon dioxide (CO2) emissions.[1] The limits are premised on capture and sequestration of 58 percent of the plant's CO2 output, reducing its emissions to that of a natural gas-supplied facility. The project proponent accepted the CO2 limits as part of a settlement with the Sierra Club and the Idaho Conservation League. The proposed plant is to be located southwest of Pocatello, Idaho.[2] The State of Idaho does not regulate CO2 as a pollutant under its air laws, and has been careful to state that the limits voluntarily assumed by the project will not be considered binding on other Idaho facilities.[3] Nonetheless, if EPA proceeds with proposed regulatory actions that bring CO2 emissions within the Clean Air Act's permitting requirements, and this project is constructed and implements carbon capture and sequestration as planned, it will set a technology standard that will be relevant to future project permitting.

The project, known as the Power County Advanced Energy Center and being developed by Southeast Idaho Energy, LLC,[4] is designed to gasify 2,000 to 2,300 tons per day of coal and petcoke. The resulting synthesis gas would be used to manufacture ammonia, which would then be used to produce nitrogen-based fertilizers.[5] Natural gas is commonly used as a fertilizer feedstock, and this apparently provides the rationale for reducing CO2 emissions from the plant to roughly the equivalent of what would be emitted by a similar-sized fertilizer plant supplied by natural gas.[6] The plant developer plans to capture at least 58 percent of the CO2 that otherwise would be emitted by the plant, and sequester it in oil fields in Southwestern Wyoming, approximately 80 miles away.[7]

Background on Power County Advanced Energy Center

The Idaho project was first proposed in 2005 as a 520 megawatt Integrated Gasification Combined Cycle (IGCC) power plant. In 2007, the project was reconfigured as a fertilizer and synthetic diesel fuel plant, with feedstocks to be supplied through coal gasification.^[8] In 2008, the scope of the project was limited to production of fertilizer products and elemental sulfur, still based upon gasified coal.^[9]

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 10, 2013 5:27 PM
To: goo.michael@epa.gov
Subject: Fw: CSAPR Concerns

----- Forwarded Message -----

From: Michael Bradley <mbradley@mjbradley.net>
To: [Ex. 6 - Michael Goo]
Sent: Sunday, September 18, 2011 1:38 AM
Subject: FW: CSAPR Concerns

Michael,

Below is the message I have sent to Gina and Joe. I can be reached before 10:00 AM eastern time tomorrow morning and after 3:30 PM when I arrive in DC.

Michael

From: Michael Bradley [mailto:mbradley@mjbradley.com]
Sent: Sunday, September 18, 2011 1:35 AM
To: [Ex. 6 - Joe Goffman]
Subject: FW: CSAPR Concerns

Joe,

Would you please send this email on to Gina for me? I would have sent it to her directly with a cc to you but I don't have a private email address for her and would prefer to not use an official email address. Your calls to Eric and Bob were very helpful in reassuring them that EPA is looking to be responsive to their State budget concerns but time is becoming an issue and others within PSEG and NGrid are pushing for a clear resolution in the very near term. Thanks.

Gina,

As you know, many of the CEG companies have been having a series of conversations with EPA about the concerns on the final state budgets under the Cross-State Air Pollution Rule (CSAPR). The companies want to remain supportive of the final CSAPR because it is intended to reduce emissions. In general, the companies see the rule as improving on CAIR and being responsive to the D.C. Circuit's decision. However, we are continuing to identify errors in the final rule that we believe could undermine the legal stability of the rule. Our goal is to have a rule implemented that is legally sound, gives the industry the needed business certainty for investments in cleaner generation,

and addresses the air transport issues affecting many of the state in which the CEG members operate. We would not want to see the rule stayed.

However, as we have discussed, the state budgets for NY, NJ, and FL were significantly reduced in the final rule. These changes are making supporting the implementation of the rule, as currently written, very difficult. While we understand EPA is willing to consider making technical adjustments to state budgets based on new technical information, we are concerned that despite efforts to provide EPA with additional information, EPA may not be able to adjust those state budgets until after October 7th the deadline for when petitions for reconsideration and petitions to the DC Circuit are due. Additionally, since the rule's release, multiple levels of staff at the various CEG companies have become involved in evaluating the implications of the rule and suggesting various courses of action, which, as I am sure you can appreciate, make the dynamics difficult to manage.

Since the rule's release about 10 weeks ago, we have been working to explain the concerns we have with certain state budgets and highlight the technical errors that result from using the IPM model and not taking into account the transmission system constraints that are unique to certain areas in the U.S. The following explains our specific concerns related to New Jersey, New York and Florida as well as the outreach we have had with EPA.

Following Eric Svenson's outreach to you regarding PSEG's concerns, we have had several discussions with Joe Goffman and Sam Napolitano on the NJ state budget.

Compared to the proposed budget, New Jersey's final annual NOx budget was reduced by 39 percent, the ozone season NOx budget was reduced by 36 percent, and New Jersey's SO2 budget was reduced by 51 percent. With fewer allowances available to the state, several of PSEG's generating units are projected to be short allowances beginning in 2012, despite having advanced pollution control equipment installed and operating. Additionally, since PSEG's generating fleet is generally well controlled, there are limited opportunities for further emissions reductions between now and 2012.

A similar situation exists for NY. Compared to 2010 emissions, NY state looks to be significantly short of the 2012 state budgets even with the assurance provisions. We understand the NYDEC has been engaged with EPA to provide information to highlight the fact that there are many units in NY that must operate due to transmission constraints but for which the model predicted the units to have zero heat input. Both National Grid and Consolidated Edison of NY have also had calls with Sam and Joe to express similar concerns with the model and state budget, and had provided similar information about these must run units during the comment period. Without adjustments to the state budget, there are concerns that units needed for reliability purposes would not be able to operate.

NextEra has also met with Joe and Sam several times regarding the Florida state budget, and there we are also seeing that the IPM model fails to recognize that some units will need to run for reliability purposes due to natural gas constraints. This was an

issue NextEra and others also raised during the comment period, and the inability of the model to make these adjustments significantly impacts the state allowance budget.

The concerns described above are creating a very difficult dynamic within the Clean Energy Group and for these individual companies to remain supportive of EPA's regulations. The approaches in the final rule appear to penalize the early investments many of the CEG companies made in anticipation of regulations. Additionally, the rule does not allow for economic growth as there is not updating of allowance allocations.

I am appreciative of EPA's efforts to try to make the necessary adjustments to state budgets that have clear errors while ensuring that any changes do not affect the timely implementation of the entire rule. The CEG members similarly want to make sure that right balance is struck so that the rule can remain effective in January 2012. Joe in particular has been very constructive in trying to find any appropriate solutions, but given the tight timeframe leading up to October 7th, I wanted you to be aware of the difficult position in which many of the CEG members are finding themselves.

Please do not hesitate to call me with any questions. I will be traveling tomorrow from the west coast to DC, arriving at 4:00 PM, and plan to be in DC all day on Monday and Tuesday. With the exception of the times when Sue Tierney, Paul Allen and I are presenting a Utility Toxics Rule briefing for House and Senate staff on Monday I'm available to discuss these issues with you and others.

Michael

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, May 9, 2013 5:01 PM
To: goo.michael@epa.gov
Subject: Fw: Freudian slip

----- Forwarded Message -----

From: michael Goo [Ex. 6 - Personal Privacy]
To: "Hawkins, Dave" <dhawkins@nrdc.org>; "Doniger, David" <ddoniger@nrdc.org>; Climate EPA GHG/CAA fight <ClimateEPAGHG_CAAfight@nrdc.org>
Sent: Tuesday, June 21, 2011 8:58 AM
Subject: Re: Freudian slip

Obviously I did not control the house of representatives enough...thanks for sharing....very funny

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: "Doniger, David" <ddoniger@nrdc.org>; Climate EPA GHG/CAA fight <ClimateEPAGHG_CAAfight@nrdc.org>
Cc: Michael Goo [Ex. 6 - Personal Privacy]
Sent: Mon, June 20, 2011 4:05:49 PM
Subject: RE: Freudian slip

Or it was referring to the time Michael worked for Markey.

From: Doniger, David
Sent: Monday, June 20, 2011 4:02 PM
To: Climate EPA GHG/CAA fight
Subject: Freudian slip

This typo appears in the USA Today story on today's Supreme Court decision.

Yet EPA's authority has been questioned by many lawmakers in the Goo-controlled House of Representatives, which passed a bill to bar the agency from moving forward.

David D. Doniger
 Policy Director, Climate Center
 Natural Resources Defense Council
 1200 New York Ave., NW
 Washington, DC 20005
 Phone: (202) 289-2403
 Cell: (202) 321-3435
 Fax: (202) 789-0859
ddoniger@nrdc.org
 on the web at www.nrdc.org
 read my blog: <http://switchboard.nrdc.org/blogs/ddoniger/>

From: michael Goo Ex. 6 - Personal Privacy
Sent: Thursday, May 9, 2013 4:58 PM
To: goo.michael@epa.gov
Subject: Fw: Fwd: Draft blog on EPA GHG NSPS
Attach: What New Coal Plants.docx

----- Forwarded Message -----

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: Michael Goo Ex. 6 - Personal Privacy
Sent: Saturday, December 10, 2011 5:38 AM
Subject: Fwd: Draft blog on EPA GHG NSPS

FYI. I think I should use the Inside EPA piece to get our views out there before the WSJ-Limbaugh-Fox echo chamber starts up.
 I am interested in your feedback.
 David

Sent from my iPad

Attached and pasted in is a draft blog responding to the industry attacks launched in Friday's Inside EPA piece. I would like to post Monday morning so please give me your comments before then.
 David

What New Coal Plants?

Flacks for the coal lobby have their hair on fire about the rumored content of a draft EPA rule for CO2 pollution from new fossil powerplants. They say it will kill new coal plants. Haven't they been paying attention? No one wants to build new coal plants. Except for a handful underway, no more are planned for the foreseeable future. We don't know what the draft rule says but we should all be asking a simple question. Exactly why should EPA write a rule that is gerrymandered to make room for dirty plants that the private sector does not want to build?

Let's look at the facts. Starting about ten years ago, there were waves of announcements for scores of new coal plants. In all, nearly 200 coal plants were proposed. Now only a handful of these projects are technically alive and they are on life support. A small number of proposed plants have permits but like many previous plants with such permits, most if not all of these proposals will turn out to be vaporware. A permit may get a developer a

meeting with project financiers but it will not get their money. The finance community understands new coal plants are simply not economic, given the alternatives that are available.

Other than a few plants under construction there is virtually no prospect of new conventional coal plants being built in the next quarter century according to the Energy Information Administration [Link to AEO2011]. EIA reports no new planned coal plants coming online after 2012 and only two unplanned gigawatts (GW) of coal with carbon capture and sequestration coming online around 2017; then nothing more through 2035, the end of the EIA forecast period.

Are the rumored new EPA CO2 standards responsible for the collapse of the new coal plant boom? No. New coal plants have succumbed to market forces. Abundant supplies of natural gas have produced lower prices for that fuel and those low prices seem here to stay. Materials costs have risen substantially and that makes capital-intensive coal plants a bad bet. Energy efficiency is increasingly recognized as the smartest way to balance power supply and demand and that is enabling economic growth with lower electricity demand. Cost reductions in renewable resources like wind and solar, along with supportive policies, have resulted in rapid growth of these projects to meet new demand and replace retiring dirty coal plants.

The market is also penalizing proposals for new conventional coal plants due to their very high CO2 emissions. Financiers know that denying the fact of global warming will not make it go away. So a project with high CO2 emissions has a large built-in financial risk that only grows over time. And that risk is unbounded, since without a clear policy roadmap it is impossible to calculate a reliable estimate of what it will cost to mitigate a conventional coal plant's high CO2 emissions.

The long lead time for coal plants underscores the conclusion that these projects are bad bets. It takes about ten years to build a coal plant from initial conception to start-up. Then it takes another 15-25 years for investors to get their money back. Even without low gas prices, an investor would have to believe that no action to address CO2 pollution will be taken over the next quarter century for them to put their money at risk in new conventional coal plants. This is not a risk that sensible investors are willing to take. So it should be no surprise that plans for new coal plants have been abandoned right and left in the United States.

As for a new EPA standard for CO2, we won't know what it says until early next year according to EPA Administrator Lisa Jackson. But let's assume EPA were to set a fuel-neutral standard for new fossil plants; one that could be met by new natural gas combined cycle plants or by new coal plants with carbon capture and storage. Such a standard would not prevent the construction of new coal plants, if and when the private sector decides such plants are a better option than alternatives. No, such a standard would just provide a level playing field for the two leading fossil fuels in the power sector: coal and natural gas. (Such a rule would not be a truly level playing field for electric resource investments since it would still heavily favor fossil fuels over zero-emitting options like efficiency, renewables, or nuclear if the latter's many problems could be solved.)

Under a fuel-neutral CO2 standard a new coal plant designed to capture about 60% of its CO2 would comply with the standard. The coal lobby will complain about the cost of carbon capture and sequestration (CCS) but that cost will not get lower if standards were set to

ensure no new coal plants will ever have to employ CCS. And the bottom line is that today it is not the cost of CCS that is blocking new coal plants; it is the cost of plain old dirty coal plants compared to the alternatives that is shelving these proposals.

Of course, no one should be surprised that the coal lobby thinks the notion of a level playing field standard is the policy equivalent of the swine flu. But we don't build new power plants in order to prop up the coal industry. We want new power resources, not to help burn more coal, but to provide heat, light, comfort, convenience and to do so reliably and in a manner that does not send our kids to the emergency room with asthma attacks, our parents to an early death, or condemn our grandchildren to a planet with a climate so disrupted that their lives will be immeasurably less safe and enriching.

Despite the coal lobby's rhetoric, building new conventional coal plants is a bad economic bet for society as well as for individual investors. Even in countries where building a new coal plant appears to be cheaper than investing in cleaner energy, the International Energy Agency reports that such a path will produce huge net economic losses. IEA reports [cite to WEO2011] that for every dollar saved by investing in a dirtier resource before 2020, countries will wind up spending more than four dollars after 2020 to overcome the impact of those dirty investments.

So let's have the debate. The market has walked away from conventional coal plants. Should EPA try to hold back the tide? Should EPA set CO2 standards for new power plants that are twisted to make the coal industry happy? Or should EPA follow the law and good policy and set standards that provide a level playing field for coal and natural gas and avoid locking us into another round of new multi-billion dollar old coal technology that will cost us more and damage our health and the only climate we have?

What New Coal Plants?

Flacks for the coal lobby have their hair on fire about the rumored content of a draft EPA rule for CO₂ pollution from new fossil powerplants. They say it will kill new coal plants. Haven't they been paying attention? No one wants to build new coal plants. Except for a handful underway, no more are planned for the foreseeable future. We don't know what the draft rule says but we should all be asking a simple question. Exactly why should EPA write a rule that is gerrymandered to make room for dirty plants that the private sector does not want to build?

Let's look at the facts. Starting about ten years ago, there were waves of announcements for scores of new coal plants. In all, nearly 200 coal plants were proposed. Now only a handful of these projects are technically alive and they are on life support. A small number of proposed plants have permits but like many previous plants with such permits, most if not all of these proposals will turn out to be vaporware. A permit may get a developer a meeting with project financiers but it will not get their money. The finance community understands new coal plants are simply not economic, given the alternatives that are available.

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The market is also penalizing proposals for new conventional coal plants due to their very high CO₂ emissions. Financiers know that denying the fact of global warming will not make it go away. So a project with high CO₂ emissions has a large built-in financial risk that only grows over time. And that risk is unbounded, since without a clear policy roadmap it is impossible to calculate a reliable estimate of what it will cost to mitigate a conventional coal plant's high CO₂ emissions.

The long lead time for coal plants underscores the conclusion that these projects are bad bets. It takes about ten years to build a coal plant from initial conception to start-up. Then it takes another 15-25 years for investors to get their money back. Even without low gas prices, an investor would have to believe that no action to address CO₂ pollution will be taken over the next quarter century for them to put their money at risk in new conventional coal plants. This is not a risk that sensible investors are willing to take. So it should be no surprise that plans for new coal plants have been abandoned right and left in the United States.

As for a new EPA standard for CO₂, we won't know what it says until early next year according to EPA Administrator Lisa Jackson. But let's assume EPA were to set a fuel-neutral standard for new fossil plants; one that could be met by new natural gas combined cycle plants or by new coal plants with carbon capture and storage. Such a standard would not prevent the

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Under a fuel-neutral CO₂ standard a new coal plant designed to capture about 60% of its CO₂ would comply with the standard. The coal lobby will complain about the cost of carbon capture and sequestration (CCS) but that cost will not get lower if standards were set to ensure no new coal plants will ever have to employ CCS. And the bottom line is that today it is not the cost of CCS that is blocking new coal plants; it is the cost of plain old dirty coal plants compared to the alternatives that is shelving these proposals.

Of course, no one should be surprised that the coal lobby thinks the notion of a level playing field standard is the policy equivalent of the swine flu. But we don't build new power plants in order to prop up the coal industry. We want new power resources, not to help burn more coal, but to provide heat, light, comfort, convenience and to do so reliably and in a manner that does not send our kids to the emergency room with asthma attacks, our parents to an early death, or condemn our grandchildren to a planet with a climate so disrupted that their lives will be immeasurably less safe and enriching.

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Under a fuel-neutral CO₂ standard a new coal plant designed to capture about 60% of its CO₂ would comply with the standard. The coal lobby will complain about the cost of carbon capture and sequestration (CCS) but that cost will not get lower if standards were set to ensure no new coal plants will ever have to employ CCS. And the bottom line is that today it is not the cost of CCS that is blocking new coal plants; it is the cost of plain old dirty coal plants compared to the alternatives that is shelving these proposals.

Of course, no one should be surprised that the coal lobby thinks the notion of a level playing field standard is the policy equivalent of the swine flu. But we don't build new power plants in order to prop up the coal industry. We want new power resources, not to help burn more coal, but to provide heat, light, comfort, convenience and to do so reliably and in a manner that does not send our kids to the emergency room with asthma attacks, our parents to an early death, or condemn our grandchildren to a planet with a climate so disrupted that their lives will be immeasurably less safe and enriching.

Despite the coal lobby's rhetoric, building new conventional coal plants is a bad economic bet for society as well as for individual investors. Even in countries where building a new coal plant appears to be cheaper than investing in cleaner energy, the International Energy Agency reports that such a path will produce huge net economic losses. IEA reports [cite to WEO2011] that for every dollar "saved" by investing in a dirtier resource before 2020, countries will wind up spending more than four dollars after 2020 to overcome the impact of those dirty investments.

So let's have the debate. The market has walked away from conventional coal plants. Should EPA try to hold back the tide? Should EPA set CO₂ standards for new power plants that are twisted to make the coal industry happy? Or should EPA follow the law and good policy and set standards that provide a level playing field for coal and natural gas and avoid locking us into another round of new multi-billion dollar old coal technology that will cost us more and damage our health and the only climate we have?

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, May 9, 2013 4:57 PM
To: goo.michael@epa.gov
Subject: Fw: Fwd: [CLEAN] blog: Toxic Trio Attacks EPA's Carbon Pollution Safeguards

----- Forwarded Message -----

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: Michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, February 3, 2012 4:24 PM
Subject: Fwd: [CLEAN] blog: Toxic Trio Attacks EPA's Carbon Pollution Safeguards

Typed on tiny keyboard. Caveat lector.

Begin forwarded message:

From: "Doniger, David" <ddoniger@nrdc.org>
Date: February 3, 2012 12:59:38 PM EST
To: <clean@lists.usclimatenetwork.org>
Subject: [CLEAN] blog: Toxic Trio Attacks EPA's Carbon Pollution Safeguards
Reply-To: "Doniger, David" <ddoniger@nrdc.org>

http://switchboard.nrdc.org/blogs/ddoniger/toxic_trio_attacks_epas_carbon.html

Toxic Trio Attacks EPA's Carbon Pollution Safeguards

In their latest attack on vital clean air safeguards, three senior House Republicans are trying to stop the Environmental Protection Agency from doing its job under the Clean Air Act to protect Americans from dangerous carbon pollution from new power plants — pollution that threatens our health and drives our increasingly extreme weather.

In a [letter](#) earlier this week, Energy and Commerce Committee chairman Fred Upton (R-MI) joined with two other friends of the big polluters, Joe Barton (R-TX) and Ed Whitefield (R-KY), to demand that the White House block those new power plant standards.

After years of delay, EPA is on the verge of issuing the first national limits on the carbon dioxide that will spew from the smokestacks of electric power plants to be built over the next decade. EPA is following the Clean Air Act passed by Congress, of course and *two* Supreme Court decisions.

Carbon pollution threatens the health of Americans by causing more severe heat waves and contributing to more devastating floods, rising sea levels, poor air quality and many other health threats. Power plants are the nation's biggest carbon polluters, and there are no national limits on that pollution.

Poll after poll confirms that the American people count on EPA to protect them from dangerous carbon pollution, don't trust polluters to police themselves, and don't buy the House Republicans' claims that EPA safeguards kill jobs. (See [here](#), [here](#), [here](#), and [here](#).)

But that's not good enough for the toxic trio. These are the same guys who led last year's unprecedented assault on the nation's public health and pollution laws in the House of Representatives. They helped pushed [191 polluter-protection measures](#) through the House last year. Fortunately, nearly all of them died in the Senate.

Their letter attempts to blame EPA for blocking construction of a hypothetical new generation of coal-burning and carbon-spewing power plants. Well, as my colleague David Hawkins puts it, [What New Coal Plants?](#) Citing forecasts from the Energy Information Administration and the private sector, Hawkins writes:

Haven't they been paying attention? No one wants to build new coal plants. Except for a handful already underway, no more are planned for the foreseeable future. The future supply of electric power belongs to natural gas, wind power and other renewables, and greater energy efficiency in our homes, offices, and industries.

This blame-EPA-for-your-own-business-decisions game is nothing new. Just last week First Energy in Ohio announced that it will close some 50-year old coal-burning plants in September 2012. As NRDC's Henry Henderson [explains](#), First Energy sought to blame the 2012 closures on EPA's new mercury standards even though it wouldn't have to meet those standards until 2015, and even though it had idled some of those units more than a year ago.

Despite the trio's claims, the standards EPA is expected to propose will not bar the construction of new coal plants. What they will do is set an emission rate performance standard (not a cap) that new coal plants must meet, based on what is technically feasible and economically reasonable. Such standards could and should provide the market with a genuine reason to use carbon capture and storage technology something lacking in today's policy environment. Unlike politicians and ideologues who blind themselves to the science, most power company executives and investors understand that they will need this technology if they are ever going to be able build coal plants again.

The Upton-Barton-Whitfield letter repeats the tired-out charge that EPA is engaged in a back door attempt to implement the climate and energy legislation that Congress failed to enact in 2010. They ignore the *existing* Clean Air Act, passed by Congress decades ago, which gave EPA the duty and the authority to tackle new pollution threats as science identifies them. As the Supreme Court held in [Massachusetts v. EPA](#) in 2007, and again in [American Electric Power v.](#)

Connecticut last year, it is already EPA's job to curb dangerous carbon pollution and protect our health and our climate under the Clean Air Act. No matter how many times this group of angry lawmakers try to mislead the public with wild claims about EPA's standards, the people's response is the same: we believe in EPA, not you and your polluter friends.

David D. Doniger
Policy Director, Climate and Clean Air Program
Natural Resources Defense Council

Please note our new address:
1152 15th Street, NW, Suite 300
Washington, DC 20005

Phone: (202) 289-2403
Cell: (202) 321-3435
Fax: (202) 289-1060
ddoniger@nrdc.org
on the web at www.nrdc.org
read my blog: <http://switchboard.nrdc.org/blogs/ddoniger/>

You received this message as a subscriber on the list:

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To be removed from the list, send any message to:

clean-unsubscribe@lists.usclimatenetwork.org

For all list information and functions, see:

<http://lists.usclimatenetwork.org/lists/info/clean>

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Monday, August 19, 2013 2:48 PM
To: goo.michael@epa.gov
Subject: Fw: Getting in touch email
Attach: 316_b.docx

----- Forwarded Message -----

From: Michael Bradley <mbradley@mjbradley.net>
To: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, September 15, 2011 2:40 PM
Subject: Re: Getting in touch email

Michael

As discussed last night, attached are some points we would suggest a response to Representative Andrews could include on the impingement mortality standard. I will follow up on the other items we discussed as well shortly. Please let me know if you have any questions.

Thanks
Michael

Many of the comments you raise are similar to the ones that EPA received during the recent public comment period. Many commenters raised concerns about EPA establishing one numeric impingement mortality standard that could be appropriately applied nationwide. As EPA staff work to respond to those comments and finalize the regulations, I wanted to share information with you in order to respond to your concerns. The decision-making process has moved far enough along that I can make several points based on modifications I expect to make in the final regulations under 316(b) related to the impingement mortality requirements.

- EPA agrees that the final regulations should reflect compliance flexibility to ensure environmental benefits are achieved in a cost-effective manner. Further, as you indicate, there are numerous factors that affect impingement and the performance of technologies including different water bodies, fragile species, facility sizes, and seasonal dynamics.
- Given the wide array of circumstances and site specific factors that affect impingement mortality, EPA has concluded that a more effective regulatory approach will be to establish a technology standard. The standard will require facilities to install and operate a preferred best technology available (BTA). However, for the small percentage of facilities where the preferred BTA technology is infeasible given site specific factors, EPA will establish a rigorous process for state environmental regulators and facilities to identify appropriate alternative technologies considering the expected impingement mortality reduction, including avoidance of impingement, and cost-benefit analyses. We believe this approach will result in tremendous improvements at the vast majority of facilities.
- EPA will require that facilities operate the technologies installed for impingement mortality consistent with best management practices.
- In response to your concern regarding closed cycle cooling, EPA expects that facilities with closed-cycle cooling, including cooling towers or cooling ponds, or pre-existing offshore velocity caps would not need to install additional technologies.
- EPA is also working to include a *de minimis* exemption for plants with extremely low impingement levels and/or mortality rates based on site specific factors and cost-benefit analyses.

From: michael Goo Ex. 6 - Personal Privacy
Sent: Thursday, May 9, 2013 4:56 PM
To: goo.michael@epa.gov
Subject: Fw: Greenpeace reactive to NSPS rule

----- Forwarded Message -----

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: Michael Goo Ex. 6 - Personal Privacy
Sent: Tuesday, March 27, 2012 4:59 PM
Subject: FW: Greenpeace reactive to NSPS rule

FYI. Greenpeace release on the proposal and my comment on it sent to CLEAN list. Kyle from Greenpeace responded off list to say they have every intention of working to get this rule adopted and asked that I pass this along to people at EPA.

On Tue, Mar 27, 2012 at 3:44 PM, Hawkins, Dave <dhawkins@nrdc.org> wrote:
 Thanks Kyle. Just a few clarifications on the provisions flagged in your statement.

Biomass: the rule applies to units rated to burn a certain amount of fossil fuels (250mmBTU/hr). Any biomass burned at such units will have its carbon included in the emissions for the unit for compliance purposes.

One-year escape hatch: this provision only applies to units that have all their permits as of the date of proposal (and a few units with DOE funding that are seeking permit renewal). While obnoxious, the impact of this should be pretty small. As EPA's RIA points out, with today's gas prices (and even with gas prices several times today's gas prices), it is not competitive to build new coal units. So the ability of these permitted units to lock-in their financing so that they can begin physical construction in 12 months is very small. Fine to criticize the provision but important to understand its real impact.

30-year averaging provision: the proposal would allow a coal unit to be built without CCS at startup but it would impose a legally enforceable obligation to meet a much tighter limit in year 11. While there is always a risk that under such a scheme that the government might blink and not enforce the second stage when it comes due, it is important to view this from the perspective of the banks who will be asked to finance these projects. Ten-years is not enough time for investors to get their money back on new coal plants, even if the projected power market conditions were better for coal than they are today. Investors will demand coal plant developers show them a business plan that includes CCS and pencils out to produce a commercial return. Sham CCS projects will not be able to pass this test and will not get financed. In addition, state regulatory commissions will not be able to approve rate recovery for such plants based on a assumption that the rule might be changed.

To the extent these features in the rule substantially increase its ability to weather the political attacks that will be waged against it, I think that most of us will feel we are better off as a result.

David

From: On Behalf Of Kyle Ash
Sent: Tuesday, March 27, 2012 3:11 PM
To:
Subject: Greenpeace reactive to NSPS rule

<http://www.greenpeace.org/usa/en/media-center/news-releases/New-greenhouse-gas-rules-riddled-with-loopholes/>

Media release - March 27, 2012

The new greenhouse gas rules issued by the Environmental Protection Agency today are welcome, but disappointing, says Greenpeace USA.

Today, the EPA issued an historic limit on carbon pollution from new power plants. Administrator Lisa Jackson and Gina McCarthy are climate heroes for moving forward despite a begrudging White House and a Congress mired by a radical right wing in love with coal and oil, says Greenpeace Climate Campaigner Kyle Ash. The decision comes as members of the Utility Air Regulatory Group (UARG) - including Duke Energy, Dominion Energy, and Southern Company - fight tooth and nail against basic environmental protections and the basic idea that climate pollution endangers Americans. The UARG does not care about communities who will lose their homes from rising sea levels, more frequent wildfires, and freak storms all caused by climate disruption.

Unfortunately, this standard is riddled with weaknesses, like exemptions for biomass and carbon capture and storage, and it does nothing to drive down current climate pollution, Mr Ash says. Three huge loopholes seriously undermine this pollution standard. First, the EPA has again exempted pollution from burning biomass. Biomass can have higher climate emissions than coal, while the resilience of American forests is doubly compromised by rising temperatures. Second, the EPA has offered a one year free-for-all so industry can scramble to get coal plants approved and avoid any limits. Third, the EPA allows new coal plants to pollute freely for ten years as long as they integrate carbon capture and storage technology (CCS) and lower emissions enough to bring their annual average pollution down to the limit after 30 years. The EPA, in effect, has defined an exemption based on unproven technology that even in theory would sequester carbon while exacerbating other catastrophic coal issues such as mountaintop removal and generating millions of tons of toxic coal ash. In 2007 the Supreme Court required the EPA develop climate pollution standards, a decision industry polluters continue to fight. Although this standard is anti-climactic since it only limits emissions from power plants not yet built, old coal continues to fight a market that has clearly realized coal power is dirty, old, and expensive. While the new rule may help keep new giant sources of emissions from coming online, the Obama administration has yet to require limits on carbon pollution from existing stationary sources. The President should stand by Administrator Jackson and her team as they push corporate polluters to reduce the CO2 spewing from smokestacks today, Mr Ash says.

For further information, contact: Keiller MacDuff [202 679 2236](tel:2026792236)

--

Kyle Ash
 Senior Legislative Representative
 Greenpeace USA
 Washington, DC
 office: [202 319 2417](tel:2023192417)
 mobile: [202 441 1314](tel:2024411314)
 skype: kyleash
 twitter: @gpkyleash

--

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skype: kyleash
twitter: @gpkyleash

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, May 9, 2013 4:58 PM
To: goo.michael@epa.gov
Subject: Fw: MATS

----- Forwarded Message -----

From: "Hawkins, Dave" <dhawkins@nrdc.org>

To: Michael Goo [Ex. 6 - Personal Privacy]

Sent: Saturday, December 17, 2011 9:27 AM

Subject: MATS

Hi Michael,
Was the rule in fact signed yesterday?
David

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 10, 2013 5:33 PM
To: goo.michael@epa.gov
Subject: Fw: Suggested pints for LJ to convey to CEOs

----- Forwarded Message -----

From: Michael Bradley <mbradley@mjbbradley.com>
To: [Ex. 6 - Michael Goo]
Sent: Thursday, December 1, 2011 2:08 PM
Subject: FW: Suggested pints for LJ to convey to CEOs

Michael,

Below are some suggested talking points for Liza to convey to CEOs. She needs to remind them that she's depending on their support for an effective toxics rule, one that is legally sound and looks forward to continued collaboration on 316B.

- [REDACTED] We are in the end game on deciding the final features for the Utility Toxics Rule, and I am very appreciative of your support all the way through this process.
- [REDACTED] I want to assure you that we are trying to be as flexible as possible for the final rule, but I am leery of some of the industry pressures for certain features that present undue legal risk for the rule.
- [REDACTED] EPA is committed to ensure units that need more time to install controls and that are needed for reliability purposes receive the necessary extensions consistent with the Act, but there are certain aspects that some in the industry are calling for including adjustments to the mercury standard and the process for extensions that create significant litigation risks for the rule. We have to stay within the four corners of the Clean Air Act.
- [REDACTED] We are on a successful path to finalize an effective rule, and I am also optimistic that we can achieve similar success on the 316(b) rule.
- [REDACTED] It has, and will continue to be, very important to have companies with your vision and leadership constructively engaged with the Agency and with the industry to ensure the final Utility Toxics Rule is a legally sound rule.

You can reach me on my cell this afternoon

Thanks
Michael

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 10, 2013 5:36 PM
To: goo.michael@epa.gov
Subject: Fw: follow up

----- Forwarded Message -----

From: Michael Goo [Ex. 6 - Personal Privacy]
To: "<cjenks@mjb Bradley.com>" <cjenks@mjb Bradley.com>
Sent: Thursday, March 1, 2012 12:54 AM
Subject: Re: follow up

Thx

Sent from my iPhone

On Feb 29, 2012, at 7:32 PM, "Carrie Jenks" <cjenks@mjb Bradley.com> wrote:

Michael

As follow up to your call with Michael Bradley, below are potential talking points that could be helpful for Administration Jackson to make in the meeting on Friday with Chris Crane. I have tried to draft them as not locking EPA in with a particular definition as I assume there are still issues to discuss but this type of signal would be helpful as we move forward in the coming weeks. If you think something can be included in the NODA, it would be helpful to discuss, but my sense was that the Water Office didn't think it was appropriate to include this issue directly. I drafted the talking points based on that assumption. At the very least, it will be important for the NODA not to signal that EPA is expecting to continue with the definition as proposed without any changes. Both Michael and I expect to be in our office tomorrow if it is helpful to discuss.

Thanks
 Carrie

Potential Talking Points for Friday

- I appreciate your companies' constructive engagement on the 316(b) rule and believe the NODA should provide important assurances that we expect the final rule to move toward a more technology based standard for impingement.
- o The NODA is designed to take comment on several other issues that I know are important to your companies and your comments on the NODA will be important in

order to shape the requirements in the final rule, including whether certain technologies should be determined pre approved and whether and how best to design a de minimis exception.

- However, there are issues that will not be addressed in the NODA because they were part of the proposal, but based on the comments received from stakeholders, will be important to get right in the final rule.

- o For example, I understand companies are concerned that closed cycle cooling systems that are operating effectively would not be deemed compliant with the rule. While we do need to ensure that the systems are operating as designed, we do not intend units that we have always considered to be closed cycle cooling (with towers or ponds) to now be required to make additional investments in technologies.

- o To that end, I would ask that your staff work closely with the Water Office to ensure the final rule includes the appropriate language to be clear on these points.

Carrie F. Jenks
Senior Vice President
M.J. Bradley & Associates LLC
47 Junction Square Drive
Concord, MA 01742
cjenks@mjbroadley.com
Direct: (978) 405-1265
Cell: (202) 236-0353
Fax: (978) 369-7712

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From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 10, 2013 5:36 PM
To: goo.michael@epa.gov
Subject: Fw: follow up

----- Forwarded Message -----

From: Carrie Jenks <cjenks@mjbradley.com>
To: [Ex. 6 - Michael Goo]
Cc: "Bradley, Michael" <mbradley@mjbradley.com>
Sent: Wednesday, February 29, 2012 7:32 PM
Subject: follow up

Michael

As follow up to your call with Michael Bradley, below are potential talking points that could be helpful for Administration Jackson to make in the meeting on Friday with Chris Crane. I have tried to draft them as not locking EPA in with a particular definition as I assume there are still issues to discuss but this type of signal would be helpful as we move forward in the coming weeks. If you think something can be included in the NODA, it would be helpful to discuss, but my sense was that the Water Office didn't think it was appropriate to include this issue directly. I drafted the talking points based on that assumption. At the very least, it will be important for the NODA not to signal that EPA is expecting to continue with the definition as proposed without any changes. Both Michael and I expect to be in our office tomorrow if it is helpful to discuss.

Thanks
 Carrie

Potential Talking Points for Friday

- [REDACTED] I appreciate your companies' constructive engagement on the 316(b) rule and believe the NODA should provide important assurances that we expect the final rule to move toward a more technology based standard for impingement.
 - o The NODA is designed to take comment on several other issues that I know are important to your companies and your comments on the NODA will be important in order to shape the requirements in the final rule, including whether certain technologies should be determined pre approved and whether and how best to design a de minimis exception.
- [REDACTED] However, there are issues that will not be addressed in the NODA because they were part of the proposal, but based on the comments received from stakeholders, will be important to get right in the final rule.
 - o For example, I understand companies are concerned that closed cycle cooling

systems that are operating effectively would not be deemed compliant with the rule. While we do need to ensure that the systems are operating as designed, we do not intend units that we have always considered to be closed cycle cooling (with towers or ponds) to now be required to make additional investments in technologies.

o To that end, I would ask that your staff work closely with the Water Office to ensure the final rule includes the appropriate language to be clear on these points.

Carrie F. Jenks
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From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 10, 2013 5:30 PM
To: goo.michael@epa.gov
Subject: Fw: from michael goo

----- Forwarded Message -----

From: Michael J. Bradley [Ex. 6 - Personal Privacy]
To: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, October 6, 2011 9:24 PM
Subject: Re: from michael goo

Thanks Michael. Dealing with a little family trauma tonight and will get back to you on this tomorrow morning.

On Thu, Oct 6, 2011 at 5:10 PM, michael Goo [Ex. 6 - Personal Privacy] wrote:

- > The concerns you raise in your letter regarding the proposed impingement
- > standard are similar to concerns raised by stakeholders during the public
- > comment period. In particular, some stakeholders expressed concern with
- > establishing a single numeric impingement mortality standard that could be
- > appropriately applied nationwide.
- >
- > We are in the process of examining these concerns and crafting an
- > appropriate final rule. I am sensitive to the practical difficulties of
- > implementing a numeric impingement standard. While the agency must conclude
- > its official internal decisionmaking process, one attractive option to
- > respond to the concerns raised by you and others is an alternative
- > technology based compliance approach that would provide sufficient
- > flexibility to take into account several factors affecting impingement
- > mortality. Such factors could include different characteristics of water
- > bodies, the presence or absence of fragile species, facility size and and
- > any relevant seasonal dynamics.
- >
- > This alternative compliance approach could require facilities to install
- > and operate a preapproved technology as the best technology available
- > ((BTA). At a very small percentage of facilities, where the pre-approved
- > technology is infeasible, given site specific factors, we would likely
- > require a rigorous process for state environmental regulators and facilities
- > to identify appropriate alternative technologies.
- >
- > I believe that there are several approaches that can successfully address
- > the vast majority of concerns that you raise in your letter, while still
- > complying with both the spirit and letter of the law.

From: Michael Goo Ex. 6 - Personal Privacy
Sent: Monday, March 26, 2012 10:45 PM
To: goo.michael@epa.gov
Subject: EPA Said to Be Close to Tightening U.S. Greenhouse-Gas Limits-
Bloomberg

<http://mobile.bloomberg.com/news/2012-03-26/epa-said-to-be-close-to-tightening-u-s-greenhouse-gas-limits.html>

Sent from my iPhone

From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Monday, May 23, 2011 1:53 PM
To: goo.michael@epa.gov
Subject: Fw: NSPS algorithm from NorthBridge
Attach: Draft Formula Approach 5-20-2011.pdf

----- Forwarded Message -----

From: Conrad Schneider <cschneider@catf.us>
To: Michael Goo [Ex. 6 - Personal Privacy]
Cc: Joe Chaisson <joe100@gwi.net>; Jonathan Banks <jbanks@catf.us>
Sent: Fri, May 20, 2011 3:48:21 PM
Subject: NSPS algorithm from NorthBridge

Hi Michael-

Attached please find the latest from NorthBridge on the NSPS "function" approach. It has been further refined (and simplified) since my last message. Joe thinks NorthBridge will have some diagnostic analysis by the last part of next week. Note: I'll be out of the office next week (M-Th), so if you have any questions about this, please call Joe. His cell number is [Ex. 6 - Personal Privacy] His office number is 207/833-6786.

Thanks,
CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
cschneider@catf.us
www.catf.us
169 Park Row
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

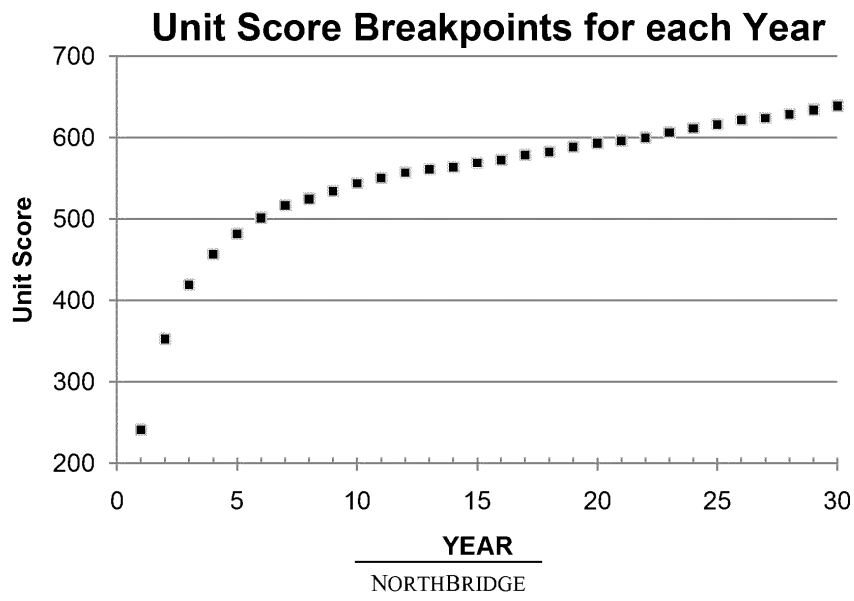
FORMULA APPROACH

The “formula” approach involves a two step process:

1. A score is calculated for each generating unit based on its size (measured in MWs) and its heat rate, as follows.

$$\text{Unit Score} = 210.4177 + 0.6384 * \text{Unit Capacity} - 23.7297 * \text{Unit Heat rate}$$

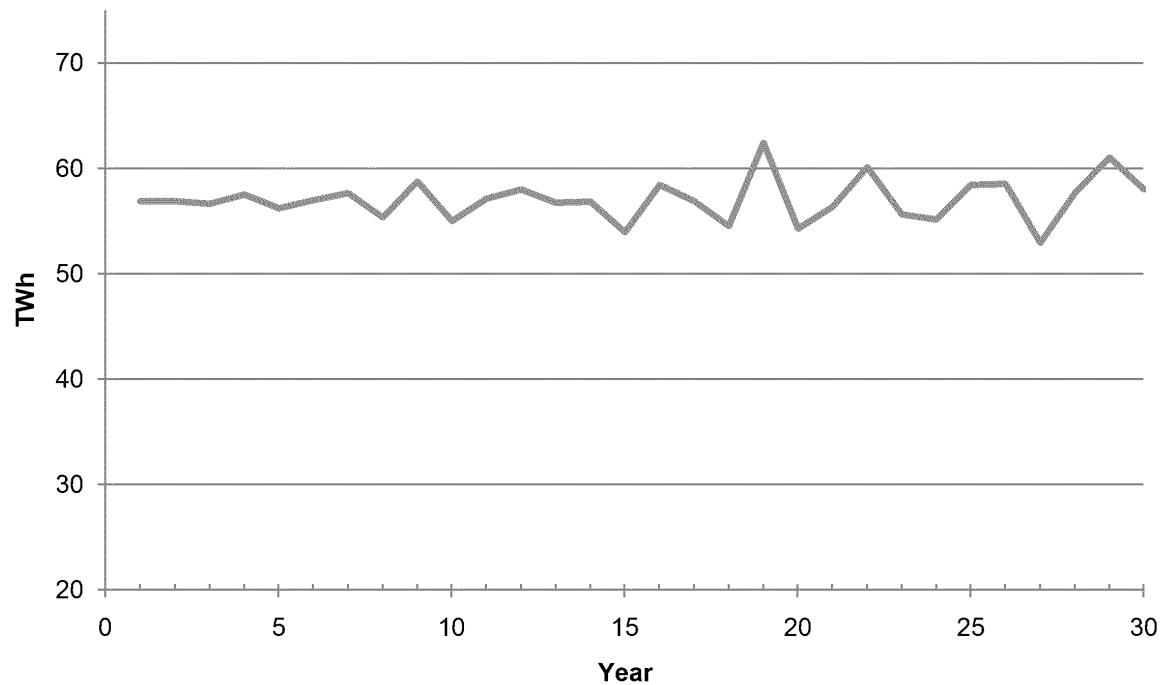
2. The resulting unit scores are used to determine the year in which each unit is first required to be in compliance.



5/10/2011

FORMULA APPROACH

Resulting TWhs by Year

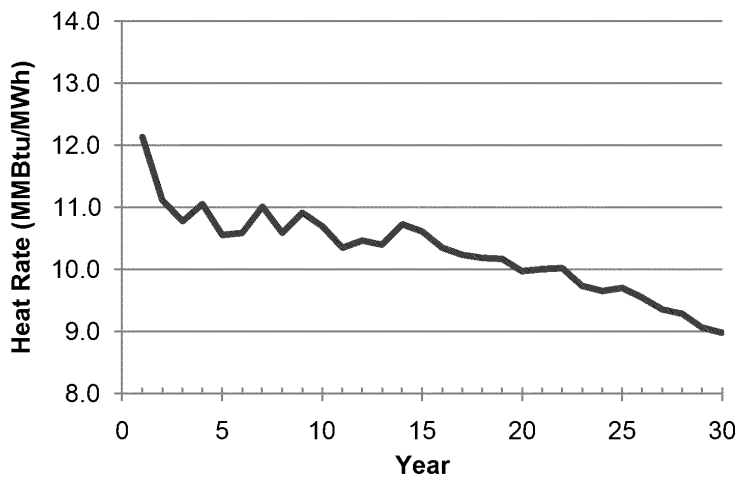


NORTHBRIDGE

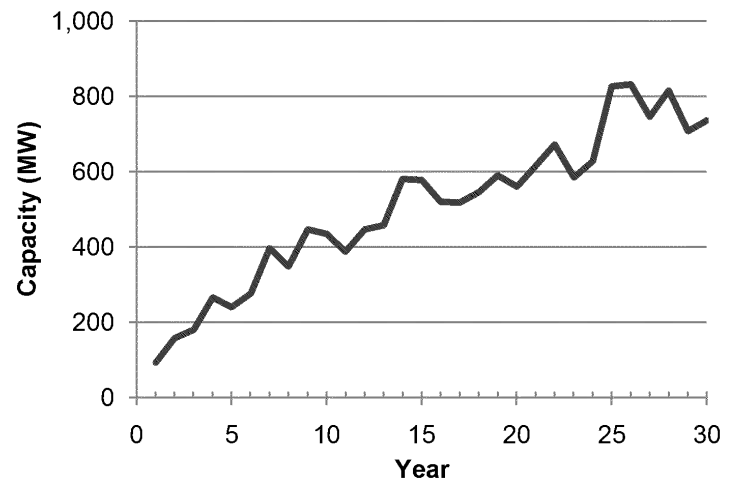
5/10/2011

FORMULA APPROACH

Average Heat Rate by Year



Average Unit Size by Year



From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Friday, May 6, 2011 9:57 AM
To: Joseph Chaisson <joe100@gwi.net>
Subject: Re: Comments on NSPS option X

so it would be for the entire coal fired fleet---we would have to rewrite it....

From: Joseph Chaisson <joe100@gwi.net>
To: [Ex. 6 - Michael Goo]
Cc: Conrad Schneider [Ex. 6 - Personal Privacy]; Jonathan Banks <jbanks@catf.us>; Mike Fowler <mfowler@catf.us>
Sent: Thu, May 5, 2011 3:19:49 PM
Subject: Comments on NSPS option X

Michael -
Some thoughts:

1. Our understanding is that subpart Da only addresses units built after September 19, 1978 - far from the entire coal unit fleet. Our proposals and the analysis of the impact of a 10,000 HR/2100 lbs/MWH standard were based on the entire existing coal unit "fleet".

2. Is there some reason why your proposal is intended to apply only to subpart Da units??

3. If we can find a reliable data base on the extent and characteristics of gas co-firing capability installed at existing coal units, it may be possible to do a rough economic analysis of what fraction of existing units could meet the 10,000 HR 2100 lbs/MWh standard. This would take some time. But clearly, **some fraction** (currently unknown) of the ~35% of existing coal capacity and electricity generation that could probably not meet this standard solely through unit efficiency upgrades could do so with gas co-firing and without severe adverse economic consequences.

4. Key factors in the economics of gas co-firing to meet this standard would be:

Future gas prices, which are currently very low, but many see trending towards the \$7 range.

Coal costs - in general, PRB coal is much cheaper than Appalachian coal (today), but many units using eastern coal may have contract prices below current spot prices .

Natural gas pipeline access - is there pipeline within a reasonable connection cost distance that has sufficient capacity to supply the necessary gas?

Heat rate - very high heat rate units will have a much bigger burden than units close to the 10,500 HR level.

5. In general, proposal X becomes more plausible with gas co-firing, but it is difficult to characterize the impacts of this policy absent better data (primarily of gas access and existing gas co-firing installations) and considerably more analysis.

Please let us know if you have more questions.

Joe

NSPS Option X

- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Set a single [1] uniform emission rate or heat rate standard for all Da sources
- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Standard would be somewhere in the range of 1600 (with trading) to 2100 (less or no trading) lbs CO₂ per megawatt hour
- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Use 2100 lbs CO₂ per MW hour as straw proposal= roughly a heat rate of 10,000
 - o According to CATF guesstimates about 38% of existing capacity and would already meet this standard.
 - o About 28.5% of capacity are units with heat rates between 10,000-10,500 and these represent the outer boundary of units that would attempt to meet the standard through improved efficiency
 - o The total percentage of units that can meet the standard easily without improvements and units that are close to the standard is about 65% of the coal fired fleet **capacity and electricity generation**.
 - o Units above 10,500 heat rate would constitute about 34% of existing **capacity and electricity generation**.
 - o If all units above 10,500 heat rate retire BAU power systems emissions would drop by about 16%.
- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ BDT for subpart Da [**Da only applies to units that commenced construction after 9/19/1978**] would be met by 65% of the units [**all units, not just Da units**] already therefore EPA can argue that it represents BDT.
- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ All units would be able to meet this standard through conversion to natural gas boilers [**assuming they have reasonable access to natural gas pipelines - some units do not**] therefore no unit would be required to shut down to meet the standard. Query

whether many units would choose to do so.

- Many units could meet the standard through natural gas co-firing query whether units would choose to do so and at which level--- one could adjust the standard level downward to tune the standard to achieve the desired policy outcome and taking natural gas co firing into account. Not all units can natural gas cofire.
- Standard could be made effective anywhere between 2018 and 2025. Use 2020 as a straw proposal.

We have not given much thought to trading as we have been working on options that avoid trading.

- Could add a trading module for generation of credits within existing DA or within new and existing Da.
 - o Credits would be generated by setting a baseline for all existing sources using their 2008-2010 actual emissions.
 - o Sources with 2008-2010 baselines above the 10,000 heat rate could generate credits by emitting below 10,000 (including by shutting down) during the period between rule promulgation and the effective date of the standard (2020)
 - o A second tranche of credit generating units could be included---for instance those units with heat rates between 8000 and 10,000. It's not clear what the rationale would be for allowing those units to generate credits and not others. Modeling could help figure out if a second tranche is necessary or advisable.
- Remaining useful life safety valve: Instead of (or in addition to) trading, remaining useful life could be defined in terms of the impact of meeting the standard on a state (or RTO's) average electricity price. If a state determined that the impact of a specific unit meeting the standard would result in an electricity price impact greater than x% (say 2%) then the state could determine that the source in question should not meet the standard.
- State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.

- ☐☐☐☐☐☐☐ CCS use demonstration provision to allow first 10 GW of CCS to meet an 1800 lbs CO₂ per MW hour and to generate credit for all generation below that level. **Why not give CCS full credit for reducing to 2100 lbs/MWH?**

[1] I believe this same approach could be used under the subcategorization approach being authored by Kevin, using differing efficiency levels.

From: michael Goo Ex. 6 - Personal Privacy
Sent: Monday, May 23, 2011 1:54 PM
To: Conrad Schneider <cschneider@catf.us>
Subject: Re: Initial reaction to NSPS concepts

thanks conrad. I am anxious to hear more

From: Conrad Schneider <cschneider@catf.us>
To: Michael Goo Ex. 6 - Personal Privacy
Sent: Sat, May 21, 2011 10:56:54 AM
Subject: Initial reaction to NSPS concepts

Hi Michael-

Im out the door for a week in sunny California with my wife. But, I wanted to give you some brief reactions from CATF staff to your read out from the meeting with the Administrator. By separate message, I sent you our latest thinking on the "algorithm". Contact Joe or Jonathan if you have questions in my absence. Joe says that we should have some diagnostics for you next week. The algorithm should be able to work with any target rate (including your 2100). Hopefully, we'll have some more information on gas co-firing next week as well. Joe is working with Alex Barron on that. With respect OAR's idea for new source NSPS -- 1850 now and 350 in 2025, my folks LOVED it (assuming it also applies to gas plants). We believe that we can help EPA build a strong record in support of setting the 350 standard in 2025. We are looking at some issues e.g., what about New England where there may be little CO2 pipeline or sequestration potential. But, in general, this is just the kind of standard we need to drive deployment of cleaner coal and gas technology and level the playing field with other zero- or near zero-power options. Let's discuss how we can support. People also really liked your demonstration provision concept. We are doing some economic analysis on it to see whether we think that will be enough to drive CCS deployment, but in some places the answer likely is yes. We don't like Sussman's idea of intra-company trading to meet the 111(b) standard (unless it is limited to your demonstration concept). We can discuss. Ann is looking into some of the legal issues implicated by all of this and we'll be back to you about that. Talk to you end of next week when I'm back in the office.

Cheers,
CS

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 207/721-8676
 207/721-8696 (facsimile)

From: Michael Goo Ex. 6 - Personal Privacy
Sent: Thursday, March 1, 2012 12:54 AM
To: cjenks@mjbradley.com
Subject: Re: follow up

Thx

Sent from my iPhone

On Feb 29, 2012, at 7:32 PM, "Carrie Jenks" <cjenks@mjbradley.com> wrote:

Michael

As follow up to your call with Michael Bradley, below are potential talking points that could be helpful for Administration Jackson to make in the meeting on Friday with Chris Crane. I have tried to draft them as not locking EPA in with a particular definition as I assume there are still issues to discuss but this type of signal would be helpful as we move forward in the coming weeks. If you think something can be included in the NODA, it would be helpful to discuss, but my sense was that the Water Office didnt think it was appropriate to include this issue directly. I drafted the talking points based on that assumption. At the very least, it will be important for the NODA not to signal that EPA is expecting to continue with the definition as proposed without any changes. Both Michael and I expect to be in our office tomorrow if it is helpful to discuss.

Thanks

Carrie

Potential Talking Points for Friday

□□□□□□□□ I appreciate your companies constructive engagement on the 316(b) rule and believe the NODA should provide important assurances that we expect the final rule to move toward a more technology based standard for impingement.

o The NODA is designed to take comment on several other issues that I know are important to your companies and your comments on the NODA will be important in order to shape the requirements in the final rule, including whether certain technologies should be determined pre approved and whether and how best to design a de minimis exception.

□□□□□□□□ However, there are issues that will not be addressed in the NODA because they were part of the proposal, but based on the comments received from stakeholders, will be important to get right in the final rule.

o For example, I understand companies are concerned that closed cycle cooling systems that are operating effectively would not be deemed compliant with the rule. While we do need to ensure that the systems are operating as designed, we do not intend units that we have always considered to be closed cycle cooling (with towers or ponds) to now be required to make additional investments in technologies.

o To that end, I would ask that your staff work closely with the Water Office to ensure the final rule includes the appropriate language to be clear on these points.

Carrie F. Jenks
Senior Vice President
M.J. Bradley & Associates LLC
47 Junction Square Drive
Concord, MA 01742
cjenks@mjb Bradley.com
Direct: (978) 405-1265
Cell: (202) 236-0353
Fax: (978) 369-7712

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From: michael Goo [Ex. 6 - Personal Privacy]
Sent: Thursday, May 5, 2011 12:49 PM
To: Conrad Schneider <cschneider@catf.us>
Subject: Re: test

NSPS Option X

- Set a single^[1] uniform emission rate or heat rate standard for all Da sources
- Standard would be somewhere in the range of 1600 (with trading) to 2100 (less or no trading) lbs CO₂ per megawatt hour
- Use 2100 lbs CO₂ per MW hour as straw proposal= roughly a heat rate of 10,000
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- BDT for subpart Da would be met by 65% of the units already therefore EPA can argue that it represents BDT.

- All units would be able to meet this standard through conversion to natural gas boilers therefore no unit would be required to shut down to meet the standard. Query whether many units would choose to do so.
- Many units could meet the standard through natural gas co-firing query whether units would choose to do so and at which level---one could adjust the standard level downward to tune the standard to achieve the desired policy outcome and taking natural gas co firing into account. Not all units can natural gas cofire.
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- [REDACTED] State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.
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[1] I believe this same approach could be used under the subcategorization approach being authored by Kevin, using differing efficiency levels.

From: michael Goo [REDACTED] Ex. 6 - Personal Privacy
To: Conrad Schneider <cschneider@catf.us>
Sent: Thu, May 5, 2011 12:47:58 PM
Subject: Re: test

From: Conrad Schneider <cschneider@catf.us>
To: Michael Goo [REDACTED] Ex. 6 - Personal Privacy
Sent: Thu, May 5, 2011 12:47:16 PM
Subject: test

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From: michael Goo { Ex. 6 - Personal Privacy }
Sent: Thursday, May 5, 2011 12:48 PM
To: Conrad Schneider <cschneider@catf.us>
Subject: Re: test
Attach: NSPS Option X.docx

From: Conrad Schneider <cschneider@catf.us>
To: Michael Goo { Ex. 6 - Personal Privacy }
Sent: Thu, May 5, 2011 12:47:16 PM
Subject: test

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207/721-8696 (facsimile)

NSPS Option X

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- State equivalency: Draft model rule allowing states to determine equivalency with this standard looking at all DA units in their state.
- CCS—use demonstration provision to allow first 10 GW of CCS to meet an 1800 lbs CO₂ per MW hour and to generate credit for all generation below that level.

From: michael Goo **Ex. 6 - Personal Privacy**
Sent: Tuesday, February 22, 2011 10:37 PM
To: goo.michael@epa.gov
Subject: Talking points for Senior Policy

Decisions made and next steps on EJ SCREEN

February 23, 2011

Operational Assumptions about the design of EJSCREEN

Ex. 5 - Deliberative

Ex. 5 - Deliberative

Ex. 5 - Deliberative

Options in the design of EJ SCREEN

Ex. 5 - Deliberative

Next Steps

Ex. 5 - Deliberative

From: michael Goo **Ex. 6 - Personal Privacy**
Sent: Monday, May 9, 2011 10:54 PM
To: goo.michael@epa.gov
Subject:
Attach: Other Options.docx

Other Options

Option 1

Ex. 5 - Deliberative

Variant of Option 1

Ex. 5 - Deliberative

Ex. 5 - Deliberative

Pros and Cons of Option 1 and its variant

Pro

Ex. 5 - Deliberative

Cons:

Ex. 5 - Deliberative

Other Options

Option 1

Ex. 5 - Deliberative

Variant of Option 1

Ex. 5 - Deliberative

Pros and Cons of Option 1 and its variant

Pro

Ex. 5 - Deliberative

Cons:

Ex. 5 - Deliberative

From: michael Goo **Ex. 6 - Personal Privacy**
Sent: Saturday, March 19, 2011 10:47 AM
To: goo.michael@epa.gov
Subject:

Ex. 5 - Deliberative

Ex. 5 - Deliberative